The Builder.

VOL. LXXX.—No. 3039. MAY 4, 1901.

ILLUSTRATIONS.

The Britannia Royal Naval College, Dartmouth; the Sick Quarters.—Mr. Aston Webb, A.R.A., Architect .... *Large-Page Photo-Litho.*

St. Matthew's Church, Chapel Allerton, Leeds.—Mr. G. F. Bodley, A.R.A., Architect ..... *Double-Page Ink Photo.*

Hayes Lodge, Morley, Derbyshire.—Mr. G. F. Bodley, A.R.A., Architect ..... *Double-Page Ink Photo.*

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Architecture at the Royal Academy.

THE collection of architectural drawings in the Royal Academy this year is curiously heterogeneous in character. It would certainly be very difficult for any one unacquainted with English architecture to gather from it what were the dominant tendencies or convictions of English architects at the present moment. There is little to suggest the consideration of new paths in architecture; on the contrary, Classic on the one side and Gothic on the other seem more than usually emphasised. There is rather a want also of any really leading drawings of a powerful and effective type, such as are usually selected to occupy central positions; the hanging committee seems, in fact, to have been rather in a difficulty as to grouping the drawings, on this account; they have adopted the drawing of one Academician, Mr. Jackson, to occupy the centre space on the east wall, and three church interiors by another Academician face it on the west wall; but the south wall is a medley with no centre and no leading *motif*.

The unexpected change of "Press view" day from the usual Wednesday to Thursday, for no obvious reason, must have occasioned considerable inconvenience to the representatives of many weekly papers, and obliges us to be content, in this first article, with rather hurried notes of some of the principal designs. To begin with the Academicians, Mr. Jackson's drawing before referred to (1,568) represents, in two long coloured elevations, his new buildings at Cambridge, which if we remember right were represented either in perspective or in another elevation last year. The buildings, in red brick with curved gables, and red-tiled roofs, are completely collegiate in character, and convey the impression of having been purposely assimilated to Cambridge surroundings, as the same architect's buildings at Oxford are assimilated to Oxford surroundings. The manner in which the large windows of the Law Library, which show on both elevations, are slightly varied in treatment though kept to the same general proportions, is a nice little point in the detail. We are glad also to find an Academician architect setting the example of illustrating buildings in geometrical drawings in this exhibition. Another Academician, Mr. Aston Webb, also exhibits a large geometrical drawing (1,616), a coloured detail elevation of a portion of the intended façade of the completion of the South Kensington Museum. This shows a terra-cotta-faced building with mullioned windows, a column between them in the lower story, while in the upper story the windows are separated by niches containing statues of artists (Donatello and Matsys are the two shown here—a curiously-assorted couple), shadowed with canopies. In this case the character of the design shows that kind of eclecticism which we noticed as less conspicuous than usual in this year's exhibition. The detail shown is suitable to terra-cotta, and is not too exuberant—the besetting danger in detailing with such a plastic material. Mr. Webb also exhibits a view of a more unambitious and practical building, the block for the "sick quarters" in connexion with the Britannia Royal Naval College at Dartmouth, which is illustrated in our present issue. As will be seen from the plan, it consists of three blocks of wards with two-story connecting corridors; these, and the loggias facing south-east at the end of the wards, are made use of so as to gain a little suitable and unpretending architectural effect. We also illustrate in the present issue the interior of the church of St. Matthew, Chapel Allerton, near Leeds (1,654), by Mr. Bodley; the drawing forms the centre of his group of three church interiors at the end of the room already referred to. The architecture, as will be seen, is of that perfectly orthodox and conservative type of the Gothic revival which we rarely meet with in new church designs now. The organ is placed in the old cathedral portion, over the chancel screen—a very good position for sound and for effect, provided the building is on a scale to afford proper space for it. In the present instance the organ gives the impression of being rather small, and we should like to know where the 16-foot pedal pipes are provided for; and it strikes us also that the appearance of the base to the organ-case, from which it is corbelled out, is not adequate to carry the super-structure; but it might have a different effect when seen in detail. We have no doubt that the colour effect of the nave and aisle roofs will be very agreeable and harmonious. Mr. Bodley exhibits, too, a perspective view of a house, "Hayes Lodge, Morley" (1,647), of which also we are enabled by his kindness to give an illustration in the present issue. There are some interesting points in the plan of the house, but we should not ourselves have thought a very large end window, facing full south, a good way to light a dining-room. The question of prospect, however, may have influenced this. We may observe that both this house and the church, in their architectural character, illustrate very well what Mr. Bodley said a year or two ago in an address at the Institute, in regard to the value of refinement and repose in architecture. Some of us may consider these two buildings wanting in originality; they repeat well-known types of Gothic architecture. But they certainly possess that quality of refinement to which their architect attached so much importance, and which he considered (we fear not without reason) was too often wanting in modern architecture.

Of Mr. Bodley's two other church interiors—"St. Mary's, Eccleston" (1,651) and "New Church, Kensington" (1,657), the former shows a vaulted nave, the latter a painted barrel ceiling carried by (apparently) stone arches acting as principals. One is inclined to think that in such a case more of the stone arch should be shown below the ceiling; we know that there must be a sufficient depth of spandril to make such an arch stable, but the eye rather wants to see some of it. Both these churches are

in the arcade design, of Early Decorated character, the first somewhat massive in proportion, the second with slender piers which rather remind one of Pugin's habit of design; in both of them the east window represents a late period of Gothic, verging on Perpendicular. We presume that Mr. Bodley thinks it allowable to play with and mix the details of past styles in this manner. It is open to question; perhaps, if we consent to the use of imitation mediæval at all, we have a right to pick and choose, and combine as we please. A fourth exhibit by Mr. Bodley is of considerable interest, it is the new tower designed by him (we know not if already built) for the splendid church of Long Melford in Suffolk. However one may in general object to the addition of modern Gothic to an ancient building, the former Georgian tower was so utterly devoid of interest and such a disfigurement to the church that we would certainly rather see a modern tower designed to harmonise with the rest of the building. Mr. Bodley has kept, of course, faithfully to the architectural tradition of the church, introducing the characteristic flint decoration in the basement and parapet; the angle pinnacles of the tower are very finely and effectively designed; the whole thing is done, in fact, as well as it is possible to do in such a difficult task as adding a new feature to an ancient building.

Two notable competitions, the Old Bailey and the Strand Improvement scheme, have furnished their quota to what may be called the show drawings of the exhibition. Mr. Flockhart exhibits a fine perspective drawing (1,561) of his design for the Public Building block for the Strand Improvement scheme; a very effective piling up of classic materials out of what Mr. Lethaby called "the Renaissance box of bricks," which is shown extending on a curved line behind St. Mary-le-Strand; but it must be observed that it quite crushes the church, both in respect of scale and tumultuous character of detail; and this is hardly to be wished. Messrs. Runtz & Co. exhibit two drawings of their design in the same competition; "Sketch for Exterior of Gaiety Theatre and *Morning Post* Offices" (1,560), and "Suggested Scheme for Municipal and Commercial Buildings" (1,559). The former shows a picturesque irregular grouping of blocks of building lying in different directions, with a low tower, crowned with a dome and angle pavilions, coming unsymmetrically into the composition. All this looks well enough, but a key-plan at least should have been given. In the other drawing (1,559) the towers at the extremities of public building block are very pleasing in effect, with graceful cupolas mounted on nearly plain masses of masonry which serve to flank and terminate this part of the composition; the general architectural treatment, while dignified, is quiet and reserved; but somehow the columned portico and pediment in the centre seem out of place, and as if they belonged to another building. Near these, and in the centre of the wall, a considerable space is occupied by a very large perspective drawing of some street buildings at Finsbury-circus, which is entirely without architectural or artistic interest; it is just a big drawing of "new premises." Why is this kind of thing hung, to the exclusion of works of artistic interest? We know of drawings far superior in interest to this, which have been refused; four good works illustrated in smaller drawings might have hung in the space occupied by this large piece of commonplace; and if the Academy is to act up to its title as an Academy of Arts, it should surely prefer artistic quality to superficial area in a drawing.

Two of the Old Bailey competitors are represented; Mr. Mountford by a beautifully neat and finished perspective drawing shaded in Indian ink, of his exterior design (1,611), and an equally well executed one of the interior of the central hall (1,608). The latter represents a very dignified domed interior; the exterior design is of the kind that is called "imposing;" it looks exceedingly well and there is no fault to find with it, but somehow it does not interest one very much: it is correct and cold. In the draughtsmanship, by the way, there is a fault in the drawing of the curves of the dome cornice where interrupted (to the eye) by the angle feature; the curve on each side is "tucked in" too much, and does not appear like a continuous curve interrupted: so exceedingly rare is it to see the perspective curves of a dome cornice correctly drawn, even in a careful drawing presumably by an architectural draughtsman. As to painters, they are hopeless in such a case; none of them can draw a dome. Mr. Baggallay's design for the Old Bailey Sessions House is also represented in a large perspective drawing (1,612); as we said at the time of the competition, we considered this the most characteristic and suitable design in the competition, and it presented also the best plan. The plans are not given in either case. Mr. Belcher also exhibits the perspective view of his exterior design in the same competition.

Messrs. Ernest George & Yeates, from whom we are accustomed to see drawings of pleasant and picturesque domestic interiors and exteriors, exhibit this year only one work of quite a different class, viz., the North London Crematorium in Finchley-road. They succeed in showing, however, that a crematorium may be made the occasion for an interesting and picturesque architectural grouping. The plan is given, showing an entrance forecourt with the chapel on one side of it, and a door at the further side leading into a long round-arched cloister which connects all the buildings together. A kind of Lombard-Romanesque style is adopted; above the furnace rises a tower stopped short with a cornice and a flat roof, which acts as campanile to the chapel, the bells being visibly hung in the openings of the tower; but we presume this tower also acts as an escape for the fumes from the furnace. Connected with the cloister by a portico is a small octagonal dome building, not named on the plan, but perhaps the columbarium, which groups well with the rest. What one notes in this design is that it is treated with a picturesque simplicity, added to by the plain tiled roofs, which forms a complete contract to the dead kind of official architecture often found in erections of this class, built for public authorities.

Among others of the more important buildings illustrated is Mr. A. C. Blomfield's "Rebuilding of Bank Buildings, E.C.," for the Bank of England (1,646). This is a classic design shown in a careful outline drawing; a treatment of an angle site, the centre block at the angle being kept in a flat mass, contrasted by a pavilion crowned with a cupola at a little distance on each side of it, the intervening portions of the front being treated as subordinate. The prominent portions are decorated with an order, and the whole tied together by a continuous rusticated ground story. The effect of the contrast of the centre and side pavilions is very good; but the whole façade seems to want something rather stronger at the ends to flank it. Profess Aitchison exhibits a drawing of offices at 44, Mark-lane (1,538); it may be described as a Romanesque design of very North Italian character, in three stories of round-arched windows, the arches carried on columns with very widely-projecting caps; the voussoirs of the arches have an ornamental device hatched into them, and over the ground story is a frieze composed of a flowing inlay of coloured marbles. The whole treatment is very original. Mr. Collcutt's perspective view of Lloyd's Register Offices (1,561) represents in complete form a building of part of which there was a very effective drawing in last year's Academy.* This building is a fine example of remarkably bold and picturesque treatment of columnar orders, rendered possible by walls evidently of ample thickness; the design of the piers of the attic, a collection of colonnettes bonded together in a bold rustication, is remarkable effective. Sculpture is well introduced in the spandrels of the grand story arches. The corbelled-out angle turret, a very effective feature, would be the better for a little more simplicity; it is rather too much cut up with small detail.

We may conclude our present notice by drawing attention to two small drawings, both hung low and which might easily be passed over, but remarkable for their originality. One is Mr. Beresford Pite's perspective sketch for "A Memorial Bridge" (1,672), showing a bridge with a triple archway built across the centre, crowned by a sculptured trophy in the centre of the block, while on each hand, to right and left, a double colonnade extends, covering the footways, and stopped at the ends by an arcaded pavilion. The idea is fine and original, and worth working out on a larger scale. The other is Mr. Ricardo's remarkable design for the "Terminal Station for the East Indian and Bengal and Nagpur railways, at Howrah (Calcutta)" (1,588). It has been maintained that it is impossible to absolutely originate an architectural treatment which is not more or less based on precedents, but Mr. Ricardo really seems to have succeeded in doing it, for this is like no other architecture we have ever seen, and seems to be a treatment growing directly out of the practical requirements, without regard to what are generally looked on as architectural features. It is impossible to describe the design, because it eludes the usual terms to be found in architectural glossaries; but we shall be able to illustrate it shortly. We should have liked better if the open loggia in the upper stage had stopped against the towers instead of partly extending in front of them, which produces rather a piecemeal look. But the whole thing is a healthy contrast to the "Manchester Gothic" terminal station which has hitherto excited the admiration of the Anglo-Indian.

* Illustrated in the *Builder* of September 22, 1900.

SPANISH ART AT THE GUILDHALL.

THE idea of making the popular Guildhall Exhibition this year an illustration of Spanish art was a happy one, since it was likely to interest artists as well as the general public, by bringing before them the works of some modern painters who are not very well known in this country. Modern Spanish pictures do not come this way very much, nor are the names of their authors familiar. But we do not know that the collection in the large gallery, entirely composed of works by living or recently deceased Spanish artists, is calculated by itself to awaken much enthusiasm. There is a head of a Morocco negro by Fortuny (5) which is of amazing power; but then Fortuny stands alone. There is a large sketchy picture by him of "Acrobats at Tetuan" (7), which in a way reminds one of Decamps. Of the larger works in the same gallery those of Pradilla are the most important in scale and subject; his "Boabdil Surrendering the Keys of Granada" (8) is a well-composed historical picture, in a broad full style of execution, but, like some other works in the gallery of the same class, it seems to fall short of dramatic point and expression. What interests one in general in the large gallery is a certain special quality of painting which strikes the eye as unusual; a very bold use of colour without a corresponding attention to detail; a very strong and vivid effect of sunlight in outdoor scenes, as in Rodriguez' "Garden in Seville in November" (11). We say "outdoor scenes" purposely, for of landscape in the real sense of the word there is nothing; if we are to judge by this show, it does not exist for the Spanish artist. The elaborate interior by Salvador, "A State Concert" (22), in which a scene, common-place enough in its incident and its personages, is made the occasion for a kind of gem-like effect of points of colour, is a remarkable work of its kind, but it is of a type which the French would call *clinquant*, and appeals rather to the eye than to the intellect. Gallegos' elaborately finished ecclesiastical interiors are familiar to the frequenters of Messrs. Tooth's Gallery, and are admirable of their kind. Among the pictures which have some interest of character and expression is Mélida's "The Communion of the Nuns" (31), in which the group of heads forms a remarkable example of contrasted character. Cordero's architectural pictures are very good. But in general the interest of execution is beyond the intellectual interest. Such a picture as Tusquets' "A Roman Shepherd" (26) is hardly to be called art at all, any more than wax-work is art.

There are in fact only two real painters among the Spanish—Velasquez among the ancients and Fortuny among the moderns; the best of all the others are bad seconds, or hardly seconds to them. It is they who in this case really make the exhibition, which is not confined to modern work. The second gallery contains a sad and sombre collection of the respectable mediocrities of the Spanish school, reminding us—

> "how Spagnoletto tainted
> His brush with all the blood of all the sainted,"

and how Zurbaran produced unhealthy-looking monks painted as if his brush were dipped in an inkpot. Murillo's one sweet and lovely though sentimental ideal in painting, "The Immaculate Conception," is represented in the picture lent by Sir Cuthbert Quilter (84), shining here like a light in a dark place; his "Infant Jesus Asleep" is also worth attention, and has a little of that expression of supernatural power which we see in Raphael's wonderful infant. Two or three portraits by Goya have character and colour; and his picture of "The Bulls" in the arena (72), black and dingy as it is, is certainly not lacking in energy. But otherwise this room is a melancholy spectacle, from which we escape up two or three steps to find ourselves, in Gallery 3, amid a whole collection of Velasquez pictures; a culmination which takes one by surprise. At the first sight of his masterful portrait of Quevedo the mediocrities of Gallery 2 fade from one's recollection. Here we are in a room where nearly every work is a masterpiece. Among the collection is the "Water-carrier of Seville," the picture which came by such odd fortune of war into the hands of the Duke of Wellington; one of those works in which an ordinary incident of lower-class life is raised into intellectual interest by the power of art. Compare this with Tusquets' "Roman Shepherd" before mentioned, and realise the distinction between art and mere realistic painting. "The Omelet" is another lesson of the same kind. Among the exhibits is the splendid portrait of Philip IV.; that of Isabel de Bourbon, and that of Olivares, a political scoundrel whose chief value to us now lies in the fact that Velasquez painted his portrait, a perfect embodiment of dignity of manner and rascality of character. The picture is here in two editions, of which that belonging to Mr. E. Huth (127) is undoubtedly the masterpiece; it is possible to imagine that the other (130), lent by Captain Holford, is a copy; at all events, if there is any question of authenticity, this is the one that must give way; compare the painting of the hands in this with those in No. 127. The whole roomful is a delightful and exciting surprise, led up to in a most effective manner.

There is a further surprise in store for the visitor, however, in the works by Fortuny in Gallery 4. As we have said, Velasquez and Fortuny are the two real Spanish painters, and it is curious that Fortuny, like Velasquez, should be notable for that kind of artistic power which compels our interest in common-place and even repulsive subjects by mere power of treatment. We confess that, to our thinking, Fortuny's picture called by the beautiful title "The Garden of the Poets," suggesting associations so far from those conveyed in the painting, is in feeling and character detestable—one is inclined to dislike the man who painted it; but it is a work you cannot pass over. The interior entitled "The Spanish Marriage" (177) has not this kind of drawback, and it is a perfect triumph of brilliant effect, and splendid indication of detail all subordinated to the total result—indication of detail, for Fortuny had that power which only belongs to the first class of masters of the brush, of indicating everything without any hardness of mechanical finish. In the same gallery there are a good many other small works of interest; various architectural subjects by Cordero; Fortuny's charming fancy entitled "The Butterfly"; and others worth attention. It is in this gallery and the Velasquez room that the real interest of the exhibition lies; the rest is of comparatively little consequence.

NOTES.

Architects Certificates.

OUR readers must be all acquainted with the cases of Chambers *v.* Goldthorpe and Restell *v.* Nye, in which it was decided that an architect in giving a certificate was in the position of an arbitrator, and, therefore, was not liable for negligence. When they were decided we commented on these cases at length. It is, therefore, now sufficient to say that in the official Law Reports for April there will be found the opinion of the Court of Appeal on these two cases. The decision of that Court confirms the lower Court, and it is now definitely settled that an architect under the circumstances above stated is to all intents and purposes an arbitrator. The case of Rogers *v.* James, which was also a decision of the Court of Appeal, is distinguished, and we may regard the point as now beyond discussion for good or for evil. It is desirable, however, to mention that Lord Justice Romer differed from the other two Judges. He considered that the authorities did not bear out the contention of his brethren, and he added that he considered that the liability of the architect to his employer for negligence was "more in consonance with natural justice." "It would be lamentable," he said, "that in cases of this kind an employer who pays an architect for supervising work, and who has sustained damage by his negligence, should have no remedy against him." It may fairly be said that the law as it stands does not tend to care on the part of an architect, and puts a careless in the same position as a careful practitioner.

Electric Lighting Regulations.

BY the Electric Lighting Act of 1882 the Board of Trade is empowered to make, amend, or repeal regulations for securing public safety or for ensuring a proper and sufficient supply of electrical energy. We cannot congratulate those who drafted the amendments issued this week to the old regulations. In the first place, the amendments are an almost unintelligible mass of verbiage, and in the second place we fail to see how they are going to help to secure the public safety or to ensure a steady supply of the electric light. So far as we can understand the second amendment, it amounts to this, that the Board of Trade is ultimately to have the power of forcing a consumer to give up his vested interest in a low-pressure supply. If they think it necessary they can employ a single arbitrator to fix the amount of compensation due for any loss or damage incurred in the changing from low to high pressure. The position of this arbitrator would not be an enviable one, as it is notorious that electricians are at present divided amongst themselves as to the merits and demerits of a high-pressure supply. The Board of Trade cannot be accused of unduly oppressing the supply companies; when their regulations tell against the companies the penalties are not enforced, and when the regulations favour the consumer they are amended. If these amendments are legal, then high-pressure supply will become practically universal, and it is to be hoped that inventors will design new systems of

distribution in which there is no danger from shock, and in which no damage is done by leakage currents.

The "James Forrest" Lecture.

THE ninth "James Forrest" lecture was delivered by Dr. Frank Clowes before the Institution of Civil Engineers on the 25th ult. The subject of the lecture was "Chemistry in its Relations to Engineering." Dr. Clowes emphasised the importance to engineers of at least an elementary practical acquaintance with the science of chemistry. Chemists and engineers should, he thought, work together. Engineers should have some knowledge of chemistry, and chemists should know something of engineering. As a rule, in this country engineers knew too little of chemistry, and chemists too little of engineering. He recognised that engineers could not possibly devote sufficient time to chemistry to become expert chemists or analysts, but with an elementary acquaintance with chemistry they could co-operate more intelligently with the professional chemist. As Chemist to the London County Council, Dr. Clowes has had experience of the utility of the joint application of engineering and chemical skill to the study of sewage disposal, and he considers that the success of his oil and hydrogen safety-lamp, which is now so extensively used in mines and for testing the condition of the atmosphere in the tanks of oil-tank steamships, is due to the assistance he received in its construction from engineers. Much that Dr. Clowes said concerning the relationship of chemistry to engineering might be applied with equal truth to chemistry and building construction. We have repeatedly drawn attention to the necessity for more co-operation between the members of the allied professions, and pointed out how such co-operation has been adopted with advantage on the Continent. We are glad that so eminent and able an officer of the London County Council as Dr. Clowes has taken this opportunity to demonstrate the desirability of reform.

Electrical Measurements.

THE papers by Mr. Campbell and Mr. Crawley on electrical measurements which were read to the Institution of Electrical Engineers treated of a subject of great importance to the industry. Mr. Campbell in the first part of his paper dealt more particularly with alternating current measurements, and the many methods he described showed the great variety of problems connected with measurement that have to be solved in a busy test room. One of the members who spoke criticised severely this part of the paper. In his opinion a good watt-meter would make all the measurements better than any of Mr. Campbell's combinations of instruments. In our opinion, however, he overlooked the fact that these methods were supplementary to the ordinary watt-meter methods, and, in fact, are absolutely necessary in order to check them. We can hardly be expected to take alternating current watt-meters on trust from the makers; tests must be devised in order to see whether they read correctly, and some of the methods described by Mr. Campbell answer this purpose excellently. In the second part of his paper he described various methods of getting a constant current or a constant voltage from a varying supply. These arrangements, as pointed out by Dr. Glazebrook, will be valuable in standardising laboratories for testing ordinary electric meters. Mr. Campbell makes use of the fact that the electric resistance of a nickel wire varies in an extraordinary, but well-defined manner with its temperature. He showed experimentally how he could maintain a lamp at constant brightness by his regulator, although the pressure of supply altered between wide limits. Mr. Crawley described a method he had perfected of measuring resistances accurately and with great rapidity by means of a differential galvanometer. This method has been tested at the Board of Trade laboratory, and has been found of great use for many every-day tests.

The Humming Telephone.

A PAPER read by Mr. Gill before the Dublin Section of the Institution of Electrical Engineers, on the 18th ult., describes a most remarkable experiment with a telephone and a microphone. An ordinary microphone transmitter is placed in series with an electric battery and the primary circuit of a small induction coil with the vibrator screwed tight. A telephone is then connected across the secondary terminals of the induction coil. Now, on bringing the telephone within an inch or two of the diaphragm of the transmitter, an extraordinarily loud musical note is emitted, and this note continues as long as the telephone is held near the microphone. On first reading Mr. Gill's paper we thought that very careful tuning would be necessary, and we were agreeably surprised to find that we could reproduce the experiment with the first apparatus we tried, and that no tuning is necessary. In fact, it is very difficult to put it out of tune. Placing a small variable condenser across the telephone, we were able to alter the note by moving the condenser plugs, and hence could attempt to play a tune on the telephone which could have been heard in a large concert hall. The explanation of the phenomenon is difficult. Mr. Gill is probably right in attributing it to electrical resonance, the vibrations being transmitted between the diaphragms of the telephone and the transmitter by the air. On putting a thin wooden board between the two diaphragms the note at once ceased. This experiment is very much easier to reproduce than the one shown by Mr. Duddell at the Institution last December, when he made the electric arc between the carbons of an arc lamp emit a musical note, and the note emitted is quite as loud. Mr. Gill's discovery, that the pitch of the note is altered when the telephone connexions are reversed, is very remarkable, but we are not altogether satisfied with his theoretical explanation of this effect.

St. Mildred's Church, Bread-street.

WE learn that under a revived scheme for making an underground railway from the West End of London into the City, the church of St. Mildred is again threatened with demolition. Nearly three years ago the vaults were cleared to a depth of from 16 to 17 ft., their contents were removed to the City of London Cemetery at Ilford, and a new floor, constructed of steel girders and concrete, was laid by Messrs. Dove Brothers, under the superintendence of, we believe, Mr. Charles Innes. The interior of the church—illustrated in our number of July 3, 1880—had been repaired and beautified in 1856, when the cherubim placed in pairs and holding crowns, badly executed in high relief, were removed from the dome ceiling. It has, however, escaped from the untoward fate that has attended many of Wren's London churches, for it stands, undisfigured with mediæval adornments and nineteenth century rearrangements, just as the master left it upon the completion of the fabric in 1683, at a cost of 3,705*l*. The plan is an oblong with a brick tower, 18 ft. square at base, at the south-eastern angle. The tower carries a lead-covered spire, rising to 140 ft., comprising a concaved pyramidal roof above the blocking course of the tower, above which are a lantern having large openings with a slender spire surmounted with a ball and vane. The roof of the church, too (as constructed by E. Strong the elder), is noteworthy, the cupola, which rests upon four pendentives, being formed within the external roof of the ordinary tie-beam and king-post kind, with slight deal ribs secured to the principal timbers and lathed and plastered, whilst in order to give space for the swell of the cupola, some of the tie-beams, instead of being attached to the feet of the principal rafters, are lifted about half-way up, so as to constitute collar beams, and diagonal braces from rafter to rafter are inserted. The beautifully carved work of the altar-piece, the pulpit, and sound-board is attributed to either Grinling Gibbons or one of his pupils.

Winklebury, Hampshire.

THIS interesting property, extending over 215 acres, is placed in the market. The house and grounds, encompassed with beech trees, are situated at an altitude of about 400 ft. upon the chalk range in the northern part of the county. The property, however, is chiefly notable for the ancient British camp, which lies just within the north-eastern angle of the crossing of the main road from Basingstoke to Salisbury, and the main road from Winchester to Silchester. The camp, which is circular on plan, is in a field along the eastern side of a portion of the ancient military road, the Herepathe, that may yet be traced across the country, extending almost due north and south to Southampton. At Winklebury and in the immediate vicinity have lately been discovered various early remains, including what are taken to be the horns, bones, and teeth, as burnt for sacrifice, of the *Bos longifrons*, or Celtic short-horned ox, a species that lived, as we are told, from the later Neolithical period to the close of the fourth century of the Christian era. It is believed that the fort existed at a time long antecedent to that of the Roman occupation of Great Britain. At a later period (870-1) it formed the stronghold of Ethelred, son of Ethelwolf, and of his brother Alfred, who, it is said, sallied forth from Winklebury camp at the head of the men of Wessex to meet the Danes who had advanced from Reading, at Basing, three miles distant. The camp was held by the Parliamentarian forces when in 1643-5 they laid siege to Basing House.

The Society of Water Colours.

THE present exhibition of the Society of Painters in Water Colours is not quite one of the best. The absence of Mrs. Allingham, who

has been concentrating her work on her own exhibition to open next week at the Fine Art Society's rooms, is a loss; some able contributors are not equal to their best; there are both dull and eccentric works to be found on the walls; the contents of the two screens are unusually devoid of interest. Mr. Robert Little, who is one of the irreconcileables, and whose style constitutes a "rendering" rather than an imitation of Nature, is nevertheless very powerful in his landscape "A Jacobite Gathering" (10); he has at all events a style. Mr. Albert Goodwin's views of cities and cathedrals become more and more delicate and beautiful but also less and less like reality; his "Naples" (15), with the pile of buildings in the foreground and Vesuvius in the distance, is a lovely composition, but too artificial. He gives among other things a view of the front of Wells seen at a little distance across the lawn, with the twilight just allowing the lights in the interior to show a glimmer; a very charming effect. Mr. Tom Lloyd's "Evening in June" (22) is one of the larger and more highly finished landscapes, the repose of which seems a little marred by the strongly marked oblique line of the mass of western clouds; this may be after Nature, but if so, Nature did not compose well in this case. Mr. R. W. Allan exhibits his bold and bright effect of open air and light very powerfully in "Scotch Fishing Village" (37), one of the most successful works in the room in giving the effect aimed at. Two of the finest landscape-painters in the Society, Mr. Eyre Walker and Mr. Cuthbert Rigby, have both painted winter scenes (99 and 92), Mr. Rigby taking Ennerdale, and giving us an unaccustomed aspect of the Lake district. Mr. Colin B. Philip's "At Barmouth, North Wales" (100) is also a very fine work. Mr. Arthur Melville is an experimenter, and is now trying to see "A Highland Autumn" (33) in masses of blue, instead of treating human figures in that way; but the experiment is hardly convincing. Mr. Pilsbury's "Golden Autumn" (82) is one of the best things he has produced in his peculiar highly-finished (rather too finished) style of landscape painting. The Exhibition boasts two contributions from Sir L. Alma-Tadema, both of them drawings made for scenes for "Coriolanus," and from their point of view very interesting, archæologically and architecturally. Among other architectural drawings are two "Christ's Hospital" subjects by Mr. S. J. Hodson (19 and 36), "The Gate of the Apothecaries' Garden, Chelsea" (26), by Miss Rose Barton; "The Old Street of Paris at Senlis" (120), by Mr. Rooke, and "A Mosque Door, Cairo" (144), by Mr. R. Barratt. Among other works which we like are "A Cornfield in Sussex" (54), by Mr. Thorne Waite; "The Pillar Rock" (80), by Mr. Cuthbert Rigby; "View from above Aysgarth Force" (83) by Mr. Eyre Walker; "The Bristol Valley" (117), by Mr. Thorne Waite, a small but beautifully balanced landscape in a slightly old-fashioned style; and "Evening" (152), two women burning weeds, by Mr. A. H. Marsh. Mr. E. Alexander exhibits a very large "Study" (146) of a peacock, in which he seems to have got all of the peacock but the brilliant colour—a peacock glazed over with lampblack. Surely the colour is the most important element in the glory of the peacock.

Society of Fine Arts.

THE collection of pastels by Mr. Sutton Palmer, now exhibiting at the Society of Fine Arts, shows admirable treatment of the material, but also indicates its limitations. The subjects are all landscape; and we hold that it is almost impossible to represent in pastel all the gradations of colour in landscape. In the evening scenes, a time when the meadows, &c., have lost much local colour and are rather blended into half tints, pastel may be more successful than with scenes in full daylight; this is illustrated, we think, in some of the works here; Nos. 7 and 12, for instance, and 20. There are some charming daylight landscapes however: "Stream near Barnard Castle" (35), showing masses of tree-clad hills and masses of white cloud; "Water Meadows" (39), and "Hayes Common" (16). Perhaps it may be said that Mr. Palmer has done with pastel all that can be done in landscape, and more than one could have expected; but for all that we think figure-subjects are the proper field for this medium. The drawings of hunting scenes, made by Mr. Jalland for *Punch*, exhibited in the same gallery, come under the head of comic or humorous art; they are very clever, but seem a little out of place here. Those who are familiar with them as engraved will be perhaps surprised to find that the originals are water-colour drawings, on a much larger scale than the *Punch* illustrations. On the whole they show more to advantage in black and white.

LETTER FROM PARIS.

THE work for the completion of the basilica of the Sacré Cœur at Montmartre is now being rapidly pushed on under the direction of the architect, M. Rauline. Two wells, 110 ft. deep, have just been completed for the foundations of a belfry. The electric-lighting installation is being prepared for the crypt and the church. The sculptor, M. Fagel, is putting the finishing touches to the decoration of the chapel dedicated to the Army. In each metope are finely sculptured military scenes, and groups of soldiers representing various arms; on either side of the chapel are figures of Saints Maurice and George, the patron saints of the Army. The decoration of the other chapels dedicated to the Navy, Agriculture, Commerce, Industry, and Medicine, will shortly be put in hand. The restoration of the old Roman church of Saint Pierre, close under the basilica, is rapidly proceeding.

The jury has made its awards in connexion with the competition of façades of houses lately erected at Paris, as follows:—House No. 81, Rue de Lota, architect, M. Bouwens-Van de Boyen; No. 270, Boulevard Raspail, by M. Bruneau; No. 17, Avenue de Breteuil, by M. Marcel; No. 1, Rue Peletier, by M. Morin-Goustiaux; No. 11, Rue Edmond-Valentin, by M. Sinell; and No. 45, Rue du Chateau-d'Eau by M. Rives.

The plans for the enlargement of the Bourse having now been at the disposal of the public for the past fortnight, the necessary authority will be given, and the architect, M. Cavel, will at once proceed to start the foundations for the two important new wings. The postal and other services will be installed in temporary buildings in the square surrounding the Bourse.

The Commission du Vieux Paris at its last meeting, when welcome was given to the two new members, MM. Henri Lavedan and André Hallays, decided to submit to the necessary authorities its wishes with regard to the preservation of the old Hôtel Rohan, now occupied by the Imprimière Nationale; the preservation of the house occupying the angle of the Quai des Orfèvres, in front of the Pont Neuf, in order to maintain the physiognomy of this seventeenth-century portion of Paris; the maintenance of the still existing pavilions of the old barriers of Paris, erected by Ledoux at the end of the eighteenth century; and the respect to the characteristic names of some of the oldest streets of Paris so interesting in the history of the town. By the request of the Société des Amis des Monuments Parisiens, M. Selmersheim, Diocesan Architect, has decided to re-erect, in the small square close to the Cathedral of Notre Dame, the fine old railings characteristic of one of the best epochs of French art, which once divided off the choir from the nave, and which were suppressed by Viollet-le-Duc when he undertook the restoration of the cathedral. These railings once formed portion of the interior decoration designed by Robert de Cotte, under Louis XIV., in execution of a vow made by Louis XIII.

The prolongation of the Rue Villebois-Mareuil makes it necessary to demolish the interesting old pumping station of Chaillot, situated at the angle of the Quai de Billy and the Avenue du Trocadéro, called the "Pompe à feu de Chaillot." The building still carries on its front the date 1781, that on which the brothers Perier constructed the pumping station and installed therein two English pumping engines of the Newcomen system, brought over by them from England. These two engines, known to all Parisians as "Augustine and Constantine," distributed all the drinking water at Paris from 1782 to 1857, pumping the water from the Seine to the high-level reservoirs constructed on the present Place des Etats-Unis, the supply descending thence to the four principal water fountains in Paris, at the Porte Saint Honoré, the Chaussée d'Antin, the Porte Saint Denis, and the Rue du Temple, whence it was fetched by the water carriers. These two engines, which inaugurated the water service at Paris, have been constantly at work up to a few years ago.

The competition for the construction of the new Hôtel de Ville for Sens has been gained by MM. Dupont et Poivert, architects. The building will be a rather important one in Renaissance style. The summit will receive an imposing figure of the warrior Brennus by the young sculptor Anatole Guillot, a homage done to the memory of the warrior so closely related to the history of this warlike city of old central Gaul, a souvenir of the taking of Rome in 388 B.C. The figure, which will be 9 ft. high, will be made of hammered copper, gilt.

The leading event in the artistic world of Paris at the moment is of course the opening of the two Salons for the first time in the new Art-Palace; but the contents of these will be described and criticised in our usual reviews of works of architecture, painting, and sculpture at the Salons, which will appear in the two next issues of the *Builder*.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS:

THE MEMORIAL TO QUEEN VICTORIA.

A SPECIAL general meeting of the Royal Institute of British Architects was held on Monday evening at No. 9, Conduit-street, Regent-street, W., Mr. E. A. Gruning (Vice-President) in the chair.

The minutes of last meeting having been taken as read,

The Chairman said that, on the written requisition of twelve subscribing members so to do, under By-law 60, the Council of the Institute had summoned the meeting to consider various resolutions as under, submitted by Mr. W. Woodward:—

"1. That in the opinion of this meeting the proposed National Memorial to Queen Victoria should be open to the competition of all British—including, of course, colonial — architects, sculptors, and artists.

2. That the first designs should be in the hands of the Committee at the date already fixed—viz., the end of June next—and that from those designs six should be selected, the authors of which should be engaged to perfect their schemes, and submit them at a date to be decided upon by the Committee.

3. That the author of the design selected from the six should he employed to carry out the work in collaboration with the sculptor, or sculptors, whom the Committee may designate.

4. That in the event of the memorial being thrown open to general competition, as above suggested, the information furnished to the five architects already appointed, for their guidance in the designs, be immediately made public.

5. That the whole of the preliminary designs, as well as the subsequent perfected designs, be publicly exhibited.

6. That these resolutions be at once transmitted

to the Viscount Esher with a request that they be laid before his Majesty the King."

The Chairman also stated that several letters on the subject had been received, and he would ask the Secretary, Mr. W. J. Locke, to read them.

The letters were from the President, Mr. Wm. Emerson; Mr. Macvicar Anderson, past-President; Mr. J. C. Nicol, of Birmingham; and Mr. P. A. Robson, of London.

The President wrote :—

"DEAR MR. LOCKE,—With regard to the meeting convened for Monday *re* the competition for the Queen's Memorial, will you—as I shall not be in town—inform the meeting from me that the Committees discussed and considered the three points as to whether—

(*a*) An architect of eminence should be selected to prepare designs;
(*b*) There should be an open competition;
(*c*) If a few names should be selected to prepare designs, being remunerated for the same.

The Committees, after considerable discussion, agreed to adopt the latter course.

Beyond supplying this information, I do not think there is anything further for me to say on the matter.—Yours very truly, WM. EMERSON."

Mr. Macvicar Anderson wrote :—

"DEAR SIR,—I regret that I am unable to attend the special general meeting of the Royal Institute of British Architects this evening, and that I am thus obliged to resort to the less satisfactory medium of pen and ink in order to express my views, which I hope you will do me the favour to convey to the meeting.

I wish to enter the strongest possible protest against the object for which the meeting has been convened as expressed in the resolutions to be submitted.

It may be matter of opinion what might have been the best course to have adopted in regard to the Queen Victoria Memorial—whether to have selected an individual in whom confidence could be reposed, or to have a limited competition, or to have an open competition. Personally, the last proposition is *the* one against which I should have voted, but that is not the point of my protest. If the nation desire that it be left open to all to submit suggestions, let this be expressed through the nation's representatives or the Press. What I strongly feel is that the very last body which should express such views as are embodied in the resolutions to be submitted this evening is the Royal Institute of British Architects, for its doing so would be tantamount to asking that its members who have not been invited to submit suggestions should be permitted to do so. Anything more undignified or less professional I cannot conceive. The matter has already been carefully considered by the responsible advisers of the Crown and by a Committee, composed of the official representatives, of experts—among them the President of the Royal Institute of British Architects—and the procedure recommended by them and adopted by the King should, in my opinion, be accepted by all in a spirit of loyalty, as I feel sure would have been the wish of our much-lamented Queen.

For the foregoing reasons — which I hope I have expressed clearly and concisely—I most strongly protest against the resolutions which are to be submitted to the meeting this evening; and should the Institute be so devoid of what, in my judgment, is due to itself in point of dignity and professional etiquette as to adopt them, I must respectfully request that such adoption may be accompanied by this protest.—Believe me, yours very truly, J. MACVICAR ANDERSON."

The following were the letters from Mr. Nicol and Mr. Robson:—

"DEAR SIR,—Referring to your circular calling a meeting of the Institute for Monday next, I regret my inability to be present at this special meeting to support the resolutions submitted by Mr. Wm. Woodward, but trust that they will be carried as, in the interest of the profession, they deserve to be. It is also most desirable at the present juncture that your President and individual members of your Council should state at this meeting, for the guidance of those who are asked to re-elect them, what their views are and what their action has been with regard to this national subject, and whether they are prepared to support the general principle of competition amongst architects or otherwise when asked to advise or express an opinion to public bodies; also whether they are prepared to support and actively assist the Birmingham Architectural Association in their present endeavour to induce the Council of the New University to reconsider their decision with respect to the appointment of Messrs. Webb & Bell as architects for the proposed technical buildings at Birmingham.

Awaiting your report, I am, yours faithfully,
JOHN COULSON NICOL, A.R.I.B.A."

"DEAR SIR,—The great stir which the decision of the appointed Committee has created on their selection of but six gentlemen—five architects and one sculptor—to compete in designing the national memorial to the greatest of all queens augurs most hopefully for the future of the arts during this century. It has been said that the memorial should be the best that the British can produce. But why British? Why narrow the scheme? Our late Queen not only merits the best possible memorial, but the universal love she inspired should alone be sufficient reason to check this insularity. The precise form of the memorial is a matter of hot debate, but it is surely clear that there must be no poverty of broadmindedness, that the scheme must be sufficiently comprehensive to be at once a Valhalla of a splendid monarch and of her greatest men. Let there be three architectural competitions. One, universal, with designs on a very small scale, adjudicated by a strong international committee with a British predominance; two, a selected competition, the number being dependent on the merits of the designs sent in for the first (but not exceeding one hundred)—the competitors for this second competition to be adequately paid for elaborating their previous schemes and preparing models; lastly, the final competition, limited to three from which one design is to be selected. Then let the final design be elaborated, and let there be a single competition for the sculpture by means of models. All these competitions would be adjudicated by the same committee, and the designs publicly exhibited for the benefit of the fund. Mr. Norman Shaw has said that there is no classic school of design in Britain. Even if this is so, surely here is the one great opportunity for stimulating the desire to create one. A competition on this scale could not fail to increase the national prestige, to revivify the arts, and revere our late beloved Queen in a lasting way. I understand that the Committee desired to give one architect the commission in the same way as they have appointed Mr. Brock as sculptor, and that the profession have to thank the President of the Royal Institute of British Architects for even this limited competition. However, the matter having gone thus far, there are, at present, only two courses open—(1) for the selected gentlemen to proceed with their competition, (2) for them to resign *en bloc* in deference to the loud note of disapproval which is being rung throughout the Press; and there is no question but that the latter course would meet with unqualified approval from the public, which asks very rightly, 'If five, why not twenty?' and further still, why impose a limit? The commonwealth of the arts is neither national nor racial, but universal. If the thing is to be done well, let it therefore be universal.—I am, dear sir, faithfully yours,
PHILIP A. ROBSON."

Mr. Woodward said he must thank the Council for affording them the occasion of meeting at the earliest possible opportunity. He and those who thought with him desired to show that art in this country was not on the ebb but on the flow, and they desired to give young men and others who might have grand conceptions an opportunity of giving expression to them. The Press was practically unanimous on the matter, and the memorial was one which the nation desired to be open to public competition. Seeing that the money was to be subscribed by the public, the public had a right to say, as they had said, that the memorial should be open to public competition. The object of the meeting was to declare that, seeing there was an opportunity to erect a monument to our great Queen which would last for ages the memorial should be an exemplification of the artistic feelings of the time. As the meeting was aware, a general Memorial Committee had been formed, and from that committee a special sub-committee, which included the President of the Institute. The President had not told them in his letter what steps he took to represent the feelings of the Institute. One would have thought that the President would have desired to give his Institute and the members an opportunity to show what they could do. There was not one word in the President's letter to show what his opinions were, and he ventured to express the deepest regret——

The Chairman: It was quite impossible for the President to let any one know what were the confidential opinions of the committee.

Mr. Woodward, continuing, said that no one had one word to say against the five selected architects; but it was impossible for any of those five architects to know more than any other five architects what was the particular character required in this memorial. Had the intention been to erect a cathedral, hospital, or asylum, he could have understood the committee selecting five expert architects, but no one architect—certainly no five architects—had had opportunities of showing their skill in the design of memorials of the sort proposed. It had been said that open competition would involve considerable trouble on the part of the assessors; he was not so sure, for he doubted whether the committee would be overrun with designs for the memorial. Even if they were, it would be easy to reject the designs which would have no chance. There were two great buildings which would have been lost to the world but for open competition, viz., the Paris Opera House and our own Houses of Parliament, and in this case we were more likely to get the best talent possible by open competition than by a competition restricted to five gentlemen.

Mr. Woodward then moved the first resolution.

Mr. Wilson seconded. He was sorry the Council of the Institute did not call a meeting to discuss the matter. They had heard that five architects had been appointed, but very few people seemed to have any real knowledge of what had been happening. It was for the Institute to look after its members, and they should have protested against what had been proposed and against matters being done in a hurry. He had heard remarks as to the difficulty of assessing in open competition, but the assessing in this competition might have been done by the competitors themselves.

Professor Beresford Pite said he was heartily in sympathy with Mr. Woodward's position, but he desired to move an amendment on the first resolution. Mr. Woodward's first resolution was inconsistent with his second, for how could the competition be open to all British architects, including colonials, when the designs were to be in the hands of the committee by the end of June next? His amendment was :—

"That, considering the deep and widespread interest manifested throughout the Empire in the proposed National Memorial to her late lamented Majesty Queen Victoria, and in view of the limited opportunities for the exercise of monumental design in London that have been offered during recent years, and the absence of useful precedents, this Special General Meeting of the Royal Institute of British Architects, of which her late lamented Majesty was patron throughout her long reign, respectfully urges upon the Executive Committee of the National Memorial its earnest conviction that designs should be invited in open competition from all British architects for this most important and unique monument, which, it hopes, would thus become representative of the best and most enthusiastic efforts of modern monumental architectural art. And further, this meeting would suggest to the Executive Committee the necessity of affording sufficient time for the preparation and submission of designs by architects resident in all parts of the Empire, of whom many are members of this Royal Institute."

As a member of the Council, he should like to say that the subject had not been before the Council in any form at all—no doubt, because the President had been selected to act on the Executive Committee, which was an honour done to the Institute, and a recognition of the Institute by those in authority, for which they ought to feel thankful. As to the action of the President on that committee, he thought they could all feel certain that whatever action the President had taken had been taken in the best interests of the dignity of the profession, and in what the President conceived to be the true interests of the Institute. The nature of that action the President had in no way revealed to them, and in that, of course, he was perfectly right, for he was a member of a concrete body and was not in a position without their authority to reveal what had taken place at their discussions. But the President had written them a letter which left it perfectly open to them to discuss with respect one or other of the courses which had already been before the committee. If a mistake had been made, surely that mistake must be rectified? They must not admit that because a mistake had been made officially it could not be rectified. He did not think that any one would thoughtfully assert there that a mistake had been made in form or in manner by the committee; the mistake had been made in judgment and in judgment only, and if they confined their discussion to that point any decision they might come to would have more dignity than if they discussed at large the mistakes which they imagined had been made in other directions. With regard to the whole subject of competitions, it must be remembered that the Council of the Institute and its President had from time to time been most energetic in repressing the competion fever, feeling that it had been the cause of many disastrous ills. But there were occasions, and the Queen's memorial was an occasion, when competition could do good. Reasons for this he had indicated in the amendment, because he thought it well that they should be given in the expression of

opinion of the meeting. What they objected to in the competition system, and what the Council and the Competitions Committee objected to, was the abuse of the system; but they must not let their dislike of that abuse drive them to the opposite extreme and dam up the channels of originality. There was one point on which he knew the President felt strongly, and that was as to the enormous waste of money which the competition system caused the profession; but that objection did not apply in this case at all, for it was a case in which the lamp of sacrifice would be burnt very willingly. In regard to the possible success of competition in such a subject, it must be remembered that in monumental architecture there was very little basis in facts for stimulus to build upon. The conditions were of the widest character, and unless the mind was kept fertile, and kept on what might be called the imaginative plane, no success would be achieved. He would remind them of the competition which resulted in the only fine monument of our era, *i.e.*, the Wellington monument in St. Paul's. That was a monument about which sculptors and architects would agree, and that monument was the result of open competition, and he could not imagine any committee of selection having selected Stevens before he had produced such a splendid memorial. The fine monuments of the world had been the result of competitions, and he did not think competition should be stamped out in this case because it was abused in small particulars.

Mr. H. V. Lanchester seconded the amendment. Mr. Macvicar Anderson had said in his letter that the Institute should be the last body to move in the matter, but surely it was for the representative body of architects to take a lead in expressing an opinion on an architectural question. Where were the public to look if they did not look to architects in regard to a subject that was so largely architectural? They were surely right in expressing what they thought—not for the sake of architects, but for the sake of the public; for no one believed that the work which would be put in the memorial *con amore* would, in the financial result, represent more than labourers' wages. Architects would give of their best, because they would feel proud to do so, and they desired the competition to be an open one, so that every chance should be taken to secure the very best result. He was rather sorry to see in one of the building papers a letter, signed "F.R.I.B.A.," discouraging action in the matter—not discouraging action on the ground that action was undesirable, but on the ground that they did not wish to be associated with the gentleman who had taken the matter up. To take such a course was not a sportsmanlike way of attacking a question.

Mr. Woodward: The letter appears in a journal the editor of which is a member of the Council of this Institute. *

Mr. E. W. Wimperis supported the amendment, and said that some attempt should be made to put their proceedings that night above the plane of personality. There was a consensus of opinion in regard to the five selected architects, who, it was recognised, had done a great deal to raise the standard of architectural art. Beyond that, those gentlemen had helped to found a school of national architecture of which young men of the present day would in time be the exponents. Still, the official recognition of those five architects (which other architects did not grudge them in the slightest) was also an official rejection, for there were other names which they could think of which ought to have been included. The situation was a peculiar one, for anything that might be done in the matter must be done by the younger and comparatively unknown men, for those architects who by their position might make an effectual protest were obviously not able to make any protest at all. That fact indicated a possible criticism of the proceedings that evening, *i.e.*, that the protest was by young and unknown men. That criticism was to be met by the simple fact that those who could have helped by virtue of their position were unable to do so because of the official recognition already made, and because they would be charged with personal enmity.

Mr. A. Frampton having made a few observations,

Mr. Maurice B. Adams said he agreed with everything that Professor Pite had said, but if that meeting carried a resolution, they would make a great mistake. It was no use hitting unless they hit hard, and unless they wanted to make themselves ridiculous they had better let the matter alone. The President of the Institute was a member of the Committee, and it was quite certain that he would do his utmost in the direction indicated that night.

Mr. Woodward said, as his only object was to secure open competition, he desired to withdraw his resolution and to support Professor Pite.

Mr. Silvanus Trevail protested against ignoring the Colonies in the matter. For his part, he would like the competition to be open to the world, and the best that the world could produce in art be obtained.

Mr. Elkington said the Institute ought to lead public opinion on a matter of that kind. He could see no sufficient reason why there should not be an open competition, and he did not think they need feel they were on unsafe ground in passing the resolution.

Mr. J. Douglass Mathews said he thought there was a middle course. As five architects had already been selected, the Institute would put itself in a very invidious position if it took up an attitude against what had been done. He had drafted a short amendment, to the effect "that the proposed memorial to Queen Victoria being of intense interest to the people of the Empire, that, prior to the preparation of designs by the architects invited to compete, an opportunity should be afforded to any person so disposed to submit suggestions, either written or drawn, which shall be publicly exhibited, with the author's name attached." There ought to be every opportunity given to those interested to submit suggestions, and his proposal would make that possible, while it did nothing to reject the architects already selected.

Mr. F. Lishman and Mr. H. T. Bonner having made a few remarks,

Mr. A. W. Tanner said they were in a very awkward position. Their President was a member of the executive committee, and that committee was practically presided over by his Majesty the King. He did not think a formal resolution should be sent to the committee. He thought it would be better to have their views submitted to the committee by a friend in court.

Mr. E. W. Hudson said he hoped that that meeting would not consider what it was expedient to do, but what it was right to do. There were occasions on which a great Institute like theirs should rise above expediency, and express itself according to its convictions.

The Chairman then put Professor Pite's amendment to the meeting, and declared it carried by a large majority.

The Chairman said there was a precedent for what had been done by the King's committee, for at the time of the competition for the monument to the Prince Consort the same course was adopted; six architects were then invited to compete.

It was announced that the annual general meeting will be held on May 6.

The meeting then terminated.

On the 20th inst. a meeting will be held when a paper will be read by Professor Flinders Petrie, entitled "The Sources and Growth of Architecture in Egypt," and on June 17 Professor W. R. Lethaby will read a paper on "Education in Building."

The annual dinner will be at Glasgow on October 3.

BOARD SCHOOL, OPENSHAW.—The memorial-stone of a new Board school was laid on the 27th ult. in Wheeler-street, Openshaw. This is the thirty-fifth school erected by the Manchester School Board, and it will provide accommodation for 1,400 children. The new building, which has been designed by Mr. Frank Edwards, architect, Manchester, will have classrooms on the ground floor for the infants' department and the first standard of the seniors' department, and the remaining standards will occupy the second floor. Manual instruction for boys will be provided in the basement; there will be a special room for drawing instruction, and a cookery-room and laundry are to be built apart from the main building. The contractors are Messrs. Young, Tinker, & Young, of Cheetham.

* The letter referred to was written by an eminent architect who has no sort of connexion with this journal, and in its original form was much more strongly expressed than what we actually printed; and we may point out to Mr. Lanchester that the first and most important point made by the writer of it was, that it was not dignified for the Institute to interfere in the matter; a view strongly echoed in Mr. Macvicar Anderson's letter read at the meeting.—ED.

THE SURVEYORS' INSTITUTION.

A MEETING of this Institution was held on Monday at No. 12, Great George-street, Westminster, when Mr. A. Clavell Salter read a paper on "The Ownership of the Highways," of which the following is an abbreviated report:—

The simplest and most ancient form of highway was the footpath, the right of public passage on foot only; the next, the driftway or bridle path, the right of passage on horseback or with pack horses, or, of course, on foot; lastly, the full highway, the complete right of passage in any manner, on foot, on horseback, or in vehicles. There was no difference in principle between these classes of highway, and the same rules of law governed them all. A considerable number of highways in this country were made in times comparatively recent under Acts of Parliament, such as Turnpike and Enclosure Acts. But, with these exceptions, all highways had their origin in a dedication by the owner of the soil of a right of passage over his land. Instances of such dedication were seen daily when new roads and streets were opened, and used by the public. In the case of ancient highways, it was, of course, impossible to say that any express dedication, or any actual dedication, ever took place. The highway had exisied from time immemorial, and that is all that is known. In such cases the law assumed from the fact of public user that there had been at some time a dedication by the then owner of the soil. No highway, therefore, could be made without a voluntary dedication by the owner of the soil, except, of course, by the authority of an Act of Parliament. On the other hand, a dedication to the public once made could never be revoked, and a highway which had once come into existence could never cease to be a highway, except by Act of Parliament or the Order of Quarter Sessions. In a reported case a highway had been so long disused that large trees had grown where it formerly ran; but on the existence of the public right being proved, the trees were ordered to be removed and the highway to be reopened for public use.

Dedication, however, might be subject to limitations. A person who dedicated a highway to the public did not divest himself of the property in the soil. He continued to own the soil subject to the public right of passage over the surface. In the absence of express enactment, the property in the soil remained in the former owner. Thus, where waste of a manor, the property of the lord of the manor, was enclosed under an Enclosure Act, and highways were set out, the soil of such highways remained the property of the lord, unless the Act expressly directed otherwise. Most of the highways in this country were of great antiquity, and no record of their origin existed. In such cases it was presumed that the soil of the highway to the middle of the road belonged to the owner of the adjoining land. This presumption was applied in the construction of conveyances, where the land conveyed was stated to be bounded by a highway, and such conveyance was construed to pass the soil of the highway to the middle points, even though the measurements and the colouring of the plan did not include the highway, unless the other terms of the deed made it clear that the parties intended the highway to be excluded. This presumption as to ownership applied equally where the space between the enclosed lands was occupied entirely by a metalled road, and where the space consisted of a metalled road with strips of waste on each side. Where a highway runs between enclosed lands, the law presumes that the whole space from hedge to hedge is dedicated and forms part of the highway, although only a strip in the middle may be metalled. But, notwithstanding this presumption, it is probable that most of these roadside wastes were not originally any part of the highway. There was an ancient right, when the highway was foundrous, to pass over unenclosed land adjoining the highway; and in the days when highways were always bad, and often impassable, this right of deviation was of great value. The land over which this right existed was not part of the highway, and could be enclosed; but an owner who enclosed such land, and thus made deviation impossible, incurred a liability to keep that portion of the highway in a certain state of repair. To avoid this liability owners of unenclosed lands adjoining a highway, when they enclosed such

lands, left between their fence and the highway itself a strip of land over which the right of deviation might be exercised. Such was, probably, the origin of most of the roadside wastes which were, happily, so common a feature in this country.

Certain recent statutes had made important alterations in the ownership of the soil of highways, and had vested such soil, to a certain extent and for certain purposes only, in the highway authority. But subject to the special property thus conferred on the highway authority, all the former rights of the private owner of the soil remained in him. The owner of the soil of the highway could use and enjoy his property in any way not inconsistent with the public right of passage. The trees and herbage on the highway belonged to him. He could let the right of pasturage on the roadside waste. If cattle are not using the highway to pass along it, but were depastured on the roadside waste, he could maintain trespass against the person so depasturing them. He can resist any encroachment on the highway as an encroachment on his land. He can remove anything put upon the highway not necessary to aid or regulate the public right of passage, and this whether the thing were an obstruction or not. He might excavate under the highway, make a tunnel, take minerals, provided he does not interfere with the public right of free passage over the surface. In the absence of statutory authority no pipes could be laid in the highway, no posts erected thereon, and no wires carried over it, without the permission of the owner of the soil. This applied to the whole highway, whether metalled road or roadside waste. There might be a valid dedication of a highway subject to the right of the owner of the soil to plough it up in course of husbandry along with the adjoining land. And when a footpath had always been so periodically ploughed up, the dedication was presumed to have been so limited. In the case of Arnold *v.* Blaker * a footpath had been so dedicated. The highway authority repaired the path with hard materials which made it impossible to plough it up. It was held that their act was a trespass upon the rights of the owner of the soil. The rights of the owner of the soil of the highway were further illustrated by cases in which persons had made improper use of the highway, and had then endeavoured to rely on the public right of passage. In the case of the Queen *v.* Pratt † there was a highway bounded on both sides by the land of one Mr. Bowyer, who was, therefore (as they had already seen), the presumptive owner of the soil of the highway. Thomas Pratt was seen on this highway with a dog and carrying a gun. He sent the dog into a covert next the highway. The dog drove out a pheasant which Pratt shot at. Pratt was charged with trespassing in pursuit of game on land in the possession and occupation of Mr. Bowyer. He had never left the highway, and relied on his right as a member of the public to use the highway. The court held that he was not lawfully using the highway to pass along it; that the highway was land in the possession and occupation of Mr. Bowyer; and that Pratt was guilty of trespass on that land in pursuit of game. Several other examples of a similar reasoning were cited. These cases showed how completely the rights of the owner of the soil of the highway were recognised by the law, subject only to the full public rights of passage over the surface.

On the other hand, the highway authority or any member of the public might remove any unlawful obstruction of the highway, or proceed by indictment against the person responsible for such obstruction. In view of these wide powers, many people probably asked themselves how the erection of telegraph posts in the highway, the excavation of the surface, and the constant obstruction of the right of free passage can be justified in law. It might probably be safely said that no such acts would nowadays be attempted without the express sanction of Acts of Parliament, public or private. He had next to refer to those statutes which had vested the soil of certain highways in the local highway authority, and had therefore, to the extent of such vesting, deprived the former owner of his property in the soil.

Within the metropolitan area the matter was governed by the Metropolis Management Acts, 1855, which by Section 96 provided as follows: —"All streets being highways, and the pavements, stones, and other materials thereof, and all other things provided for the purposes thereof by any surveyor of highways . . . . shall vest in and be under the management and control of" the Local Highway Authority. As regards urban districts throughout the country the Public Health Act, 1875, Section 149, provided that "All streets being or which at any time become, highways repairable by the inhabitants at large within any urban district, and the pavements, stones and other materials thereof, and all buildings, implements, and other things provided for the purposes thereof, shall vest in and be under the control of the Urban Authority." As soon as a street was made up and taken over by the Highway Authority, the soil of such street was divested from the former owner and vested in the Highway Authority. In rural districts, the only statutory vesting of highways was in the case of main road, as to which the Local Government Act, 1888, Section 11, provided that main roads should be wholly repairable by the County Council, that an Urban District Council might claim to maintain a main road within their district, in which case the County Council shall contribute to the cost, and further that "A main road and the materials thereof and all drains belonging thereto shall, except where the Urban Authority retain the powers and duties of maintaining and repairing such road, vest in the County Council." The result, therefore, was that in the metropolis and in all urban districts, the property in the soil of the highways was taken from the private owners and vested in the Local Highway Authority. In rural districts only the main roads were so vested, all other highways remaining vested as before in the private owners of the soil.

It would be seen that these statutes made an important distinction between the status of Urban and Rural Highway Authorities in regard to the highway itself. He proposed now to shortly consider the nature of the statutory property so conferred. The property in the soil of the highway which was thus given was not by any means so complete as that of a private owner. It was limited in nature and extent. The rights of a private owner of land extended to an indefinite distance above and below the surface of the soil. The rights of property of the Highway Authority under these statutes extended only to such depth as was necessary for the due maintenance and repair of the road, and only to such height as was necessary to enable them to prevent any obstruction to the traffic. Outside these limits, both above and below, the property remained in the owner of the soil. In the case of the Corporation of Tunbridge Wells *v.* Baird, in 1896, the Corporation were desirous of excavating and constructing lavatories under the surface of the well-known highway called the Pantiles. The highway was vested in them as the Highway Authority. They proceeded with the work, and an action was brought to restrain them by the person who owned the soil of the highway subject to the statutory vesting in the Corporation. The Corporation contended that, as the soil of the highway was vested in them, they were entitled as owners to excavate the lavatories. But the House of Lords held that their statutory property did not go so far, and that the excavation was a trespass on the rights of the plaintiff as an owner of the soil.

Again, in the case of the Wandsworth Board of Works *v.* The United Telephone Company, the Telephone Company had erected a wire across a London street, but at such height as not to impede the traffic or to cause appreciable danger to the public. The Board, as the Local Highway Authority, sought to enforce the removal of the wire. They contended that, as owners of the soil of the street, they had a right to object to anything being erected over their land at however great a height. A private owner could certainly so object. But it was held that their statutory property did not go so far, and that, as the wire did not impede traffic or endanger passengers, there was no infringement of the rights of the Highway Authority. If the private owner of the soil of this highway had taken action, he could probably have enforced the removal of the wire. These and other cases served to show that the ownership of the highway by the Highway Authority was very limited in extent as compared with the rights of an ordinary landowner. Moreover, the rights of an ordinary owner were perpetual, but if a highway ceased to exist as such, as by being lawfully stopped or diverted, the property in the soil immediately ceased to belong to the Highway Authority, and revested fully in the private owner.

The cases cited assisted in defining the nature and extent of the ownership of the soil of the highway by the Highway Authority. The tendency of the decisions was to restrict such ownership within very narrow limits, and to trench as little as possible upon the right of the private owner of the soil. The position created by these vesting sections is somewhat anomalous. There appeared to be something in the nature of a dual ownership. The private owner of the soil remained the owner. He remains the *sole* owner outside the narrow limits to which the statutory property of the Local Authority was confined. Within the limits of the property of the Local Authority the ownership of the private owner seemed to be in abeyance. It was certainly not extinguished, because, if the land ceased to be a highway, the rights of property of the private owner immediately came into full force.

* L. R. 6 Q. B., 433. † 4 E. & B., 860.

STANDARDISING SIZE OF BRICKS.

A CONFERENCE between representatives of the Institution of Civil Engineers, the Royal Institute of British Architects, and representatives of brickmakers was held on Friday last week at the Building Trades Exhibition, Royal Agricultural Hall, Islington, to discuss the question of standardising the size of bricks.

Mr. Thomas Blashill, who presided, said that the meeting was the outcome of meetings of a Joint Committee of the Institute of Architects and the Institution of Civil Engineers appointed to consider what appeared to be a very important matter, viz., uniformity in the size of bricks. Great difficulties arose in building works because of the difference of size in bricks which had to be used together in the same wall. The Joint Committee had drawn up certain regulations which they thought might be adopted, but before going further with them they desired to hear the view of brickmakers and others on the subject.

Mr. H. D. Searles-Wood, the hon. secretary of the Science Committee of the Institute of Architects, then read the following statement of the standard suggested by the Joint Committee :—

"The standard suggested by the Joint Committee of the Royal Institute of British Architects and the Institution of Civil Engineers is as follows :—

1. The length of the brick should be double the width plus the thickness of one vertical joint.

2. Brickwork should measure four courses of bricks and four joints to a foot.

Joints should be $\frac{1}{2}$ in. thick and an extra $\frac{1}{16}$ in., making $\frac{9}{16}$ in. for the bed joints to cover irregularities in the bricks; this gives a standard length of 9$\frac{1}{2}$ in. centre to centre of joints.

The bricks to be measured in the following manner :—

Eight stretchers laid square end and splay end in contact, frog upwards, in a straight line to measure 72 in.

Eight headers laid side by side, frog upwards, in a straight line to measure 35 in.

Eight bricks laid, the first brick frog downwards, and then alternately frog to frog and back to back, to measure 21$\frac{1}{2}$ in.

This is to apply to all classes of walling bricks, both machine and hand made, and facing bricks."

Mr. Searles-Wood also read letters on the subject from Messrs. Thomas Lawrence & Sons, brick and tile manufacturers, of Bracknell; Mr. E. Holwill, of London; and Mr. Arthur Harston, of London.

Messrs. Lawrence & Sons wrote that they quite agreed with the idea, but they pointed out that with regard to red bricks there were bound to be some bricks from the bottom part of the kiln that would be shorter than those from the upper part; in fact, to burn the darkest red colour it was necessary, or usual, to burn these bricks stood on end, and consequently the weight of the bricks above, and the heat of the fire below, made these oftentimes shrink nearly half an inch in length. As dark red was the most difficult colour to procure, they saw, as brickmakers, very serious objection to it being specified in contracts that bricks *shall* be of the standard size.

Mr. Holwill wrote that he considered the most simple rule to adopt would be that the size of bricks should be such that they should in the work run four to the yard and rise four to the foot, which would enable the quantity to be estimated easily at per foot super or per

yard super. That, of course, included joints—and naturally the width of a brick should be half the length less thickness of joint. The question then became one of the thickness of joint—and different classes of bricks required necessarily different thickness of joint. Glazed bricks and some classes of facing bricks required ½-in. joint, and the sizes of these would then be 8⅞ in. by 4⅝ in. by 2⅜ in. For bricks that required ¼-in. joint the sizes would be less by ⅛ in., viz., 8¾ in. by 4½ in. by 2¾ in. Personally, he had always worked on the above rule and found it adjust itself to the present requirements, giving less trouble than in cases where other size bricks have been introduced. The question of the thickness of the joint had in his experience been the greater source of trouble.

Mr. Harston wrote that if a uniform size could be effected to be recognised as a standard a very useful work would be done. The size he endeavoured to promulgate was 8¾ in. long, 4¼ in. wide, and 2⅝ in. thick. He had had to reject very good stock bricks because the length exceeded 9¼ in. without any proportionate increase of width; but the maker took no interest in altering to proper size, as he could sell faster than he could make. On the other hand, he (Mr. Harston) had had red pressed bricks sent to build a 9-in. wall, fair on both sides, where two widths of the stretchers placed dry, side by side, without space for joint, exceeded by ½ in. the length of the stretchers, and the brickmaker appeared to be quite unaware of the fact. He had to convince the brickmaker by asking him to experiment by building a dry 9-in. wall without having recessed headers, which, of course, he failed in attempting. Some of the Staffordshire blue-brick makers were especial sinners. They made a thin brick for the purpose of bonding with London stocks, but their bull-nose quoins were so short that they required a ⅜-in. wide vertical joint at the square end, which made very unsightly facing work. The sizes suggested by the Joint Committee were $\frac{1}{16}$ in. more each way than his figures, and left too tight a joint in heart of wall between stretchers, which joint should not be less than ⅜ in. It was always difficult to get it flushed in; but he thought that a brick which was to be used only for facing might be $\frac{1}{16}$ in., or even ⅛ in., more than his figures, so as to get a neat joint, and because, being more square and truer in its surfaces, less allowance had to be made for inequalities. But he was not an advocate for a very thin joint even in facing; given true bricks and good mortar, with sharp and perfectly clean sand, a $\frac{5}{16}$-in. joint for beds was an excellent thickness—better than ¼ in., both for appearance and strength. There was the difficulty of making London stocks and true-shaped facing bricks exactly of the same dimensions. He thought there might be a rule that the latter should be thicker in each dimension by $\frac{1}{16}$ in. or ¼ in.—preferably, so far as he was concerned, by the $\frac{1}{16}$ in.

Mr. Joplin said that the difficulties from the brickmaker's point of view were easily got over in one sense, but not in another. The difficulty of altering the moulds or dies was not insurmountable, but there would be a great difficulty in burning the bricks so as to keep them to the standard unless the greatest care was taken in the selection of the clay. There was no difficulty, so far as he could see, in making a standard size for bricks; that was in the hands of those who specified, who could reject bricks which deviated from standard. One difficulty, however, was that in some districts two sizes of bricks were made—London sizes and north-country sizes. Another difficulty would be the apathy of a great number of brickmakers, who would not care what the standard was so long as they could sell their bricks. The thickness was not so important as the length and width, and he considered 8¾ in. by 4¼ in. to be a satisfactory standard size. He thought a committee should be appointed, consisting of architects, engineers, surveyors, contractors, brickmakers, and others, representing the views of the conflicting interests, who should decide what the standard should be. Then, if the various professions would specify that size, the main difficulty would be got over. The difficulty from the brickmaker's point of view was that of shrinkage, for in the case of a mould—say, for a 9-in. brick—the shrinkage might be as much as ⅜ in.

Mr. H. W. Richards (Northern Polytechnic) said it mattered very little what the length was so long as a just proportion was kept between the header and stretcher, and that was the difficulty. The Joint Committee apparently agreed to accept one splayed end to a brick, but bricklayers found a difficulty in laying bricks with splayed ends, and could that difficulty be got over? Was it necessary to have a splayed end in a hand-made brick such as an ordinary stock brick? As to shrinkage, no one could tell the amount of contraction that would take place in burning, and he did not think it could be provided against; and to get a perfect standard would be a very difficult matter. He thought it could be said that bricks should be made of a certain thickness, but as to length, so long as one standard was aimed at, if they could maintain the proportion between stretcher and header, a great deal of good would have been done. If a rule were made that bricks were to be a certain length, with no allowance for uncertain contraction, they would have to be sorted, and hence become more expensive.

Mr. J. C. Hill, past President of the Institute of Clayworkers, said he could well understand that there was great difficulty with wire-cut brickmakers as to getting a standard size; but the Fletton brickmakers had not the same difficulty, for they did not put that amount of moisture with their bricks that the slop-brickmakers did. The dry earth they used did not shrink, and they put their bricks straight from the machine into the kilns, and any shrinkage there might be could be fully gauged. It was true they had some difficulty in the wearing of the boxes, for all boxes naturally wore as they got a little old, and the die became smaller and the boxes a little larger. Of course, all the machines could not be put under repair at once, and the result was that the boxes differed slightly in size; but the variations were so slight as not to be worth consideration. He thought that architects and others might confine themselves to a standard size for bricks for all work, and leave it to the makers to produce what was required. If they did not produce the size they would lose orders—that was, if the architects would insist on having a brick that would bond.

Mr. G. Wragge, Chairman of the Kent and Essex Brickmakers' Association, said that as a somewhat large stock brickmaker, the term "slop" brickmaker was a little painful, and, on behalf of the stock brickmakers, he desired to say that the bricks they made were sand-faced stock, and were not slop-moulded at all. It was a question not of Fletton bricks or stock bricks, but whether brickmakers were to make a brick according to architects' specification. The brickmakers were quite capable of making any size or any shaped brick that engineers or architects might require, if architects or engineers would pay the price for it; but the fact was that the engineer required the very best brick he could get, and he wanted to give the very lowest price for it. Generally speaking, the further south one went, the smaller were the bricks, and it would be a great advantage if architects, engineers, and brickmakers would come to some understanding with regard to size. There was no great objection to the sizes proposed by the Joint Committee, for practically the London stock bricks nearly came up to the proposed standard; but if they were going to have eight stretchers to measure 72 in., was that size of 72 in. to apply to the hard, well-burnt, stock brick, or was it to apply to a brick which was "golden tinted in colour"? for, to get a hard and strong brick, a great deal more firing was required than in the case of the soft brick, and the size would vary according to the amount of burning. The brick which approached nearest to what was wanted was the stock brick and the Suffolk, and the brick which least approached it was the Fletton.

Mr. Bernard Dicksee, member of the Joint Committee, said that the Committee thought they ought to assume a size that was most in use at the present day, though they would have preferred 9 in. centre to centre of joint. They measured a large number of bricks and they found that nearly all of them were about 9 in. long, and it was felt undesirable to reduce the size, because they did not think that bricklayers would lay any more in the same time, and, if not, work would cost more. The Committee, therefore, selected 9¼ in. centre to centre as their standard. As to the difference in joints, according to the quality of the work, that had been taken into consideration in their method of measurement. For a rougher brick there was a thicker joint allowed because the most projecting portions would come in contact, and, therefore, to satisfy the measurement the bricks would really be slightly smaller. As to the point of the last speaker, that the size of the stock brick would vary according to the amount of burning, that was one of the points dealt with by the Committee. He (the speaker) thought that the difficulty was that in many cases bricks were supplied as "stocks" that did not properly come under that description. He had had to condemn a large number of such bricks, which he called "shuffs." The difficulty, he thought, might be got over by kiln burning, which would burn them more equally.

Mr. S. G. Collier, of Reading said there were very few brickmakers present, and it would be impossible for those present to commit the others. The difficulty of one maker's bricks varying in size he did not suppose could be got over entirely, for the harder the brick was burnt the smaller it would be. It would be impossible to introduce a standard at once, but if they could get the opinion of the brickmakers of the country as to whether there was sufficient advantage in doing so, and whether they would be willing to do so, a step forward would have been taken. It would be a great advantage if all bricks were of the same size. He thought a brick ought to be rather less in width than half the length.

Mr. Goodenough, of Sittingbourne, said it would be impossible for all makers to enter into contracts for any considerable quantity of bricks of a stipulated size unless a price were paid that would enable them practically to throw away all those bricks which did not come up to the size required. They were face to face with the fact that it was practically impossible to recommend a specified size when makers from all the surrounding districts were supplying the London market.

The Chairman said perhaps the meeting might see fit to pass a resolution to the effect that it was desirable to get bricks as much of the same size as possible. They could hardly differ as to that; if they then formed a committee to decide what that size was to be, and if brickmakers were to do the best they could to supply the architect, engineer, and contractor with such sizes, that would help to get a standard size fixed. All manufacturers were standardising things now, and it was found a very useful thing to do.

Mr. Bates, teacher of brickwork at the Northampton and Chelsea Polytechnics, said that Mr. Richards had mentioned the real difficulty from the practical bricklayer's point of view. The bricklayer would produce good work if the width of bricks was made in proportion to the length. Brickwork was done cheaper in America than anywhere else, and was it not a fact that the brick there was smaller than the average brick in England? He would recommend the Committee, should they alter the size of bricks here, not to make them larger if they wanted the cost of the work kept down. He did not advocate any absurd size, but he might say that it was fatiguing to lay bricks, and as a practical bricklayer he could do more work with the South of England brick than he could with the North of England brick.

Mr. Hill said he would suggest that there should be a standard size for facing bricks and a slightly smaller size for inside bricks. That would give the bricklayer a chance of making a neat joint. They did not want to "hammer down" the inside bricks.

Mr. A. Saxon Snell said that was a retrograde suggestion. In building in cement it did not much matter, but the difficulty was that in building with ordinary mortar they had different sizes of bricks and different thicknesses of mortar, and that was unscientific. What they wanted was to get all the joints of the same thickness, and that should be done even with facing bricks. If they were going to have a gauge brick face they must have the wall built specially for it, and have it thick enough to carry the weight on the internal part of the wall.

Another speaker said that bricks were sometimes not made to specification, and if architects were to specify a certain size and brickmakers were to do their best to meet the requirements, the bricks which deviated from the standard could be disposed of to builders who had no specifications to work to.

Mr. Blizard said there was evidently great fear on the part of some brickmakers of being tied down to a specification of any kind, knowing, as they did, the limits of their material; for there would always be variation in the size of bricks manufactured, and the brickmaker would have great difficulty in a large job in meeting the requirements of an architect who

kept him closely to the specification. It would be a very good thing to have a standard fixed for the whole country, for the difference in shrinkage was a small point compared with the difference in the size of bricks North and South.

Mr. Searles-Wood then moved that a committee be formed to consider the desirability of making the size of bricks uniform all over the country.

Mr. Smart, of Notts, said he could see no objection to forming a committee as proposed. As a maker of wire-cut bricks and sand-facing bricks he saw no difficulty in having almost any standard size architects and engineers would agree upon, though he would prefer to make a smaller rather than a larger brick.

The motion, having been seconded, was put to the meeting and carried.

The Chairman said that Mr. Searles-Wood would enter into communication with gentlemen interested in the matter.

A vote of thanks to the Chairman concluded the proceedings.

THE MODERNISING OF THE COVENT GARDEN OPERA HOUSE.

THE alterations recently made at Covent Garden may be taken in three groups :—

I. Structural alterations for the audience.

II. Structural alterations for the management.

III. Equipment of the stage.

I.

Regarding the alterations for the audience, these comprise the remodelling of the exit and entrance arrangements of the stage and the formation of a special stalls corridor, so that the stalls, with their corridors, now form an independent whole, having their own conveniences, cloakrooms, &c., and do not, as formerly, have to encroach upon the accommodation of the pit-tier boxes, or the entrances and exits of other parts of the house.

Entering from the main vestibule, there are now two sets of swing doors into the stalls corridor. From this corridor there is a central entrance into the stalls, and one on either side (right and left). There are pass staircases from the other tiers to the stalls corridors, and a special extra exit to Floral-street.

It is needless to say that the rearrangement of entrances and exits to the stalls is of considerable importance in case of panic or fire, quite irrespective of their general convenience.

In connexion with the stalls alteration, the old-fashioned front and apron of the stage, which used to protrude into the auditorium, has been abolished, and the orchestra set closer to the curtain line. This will considerably affect the lighting arrangements of the stage and bring the "picture" more in accordance with modern ideas. It also leads to the arrangement of extra rows of stalls. Two new boxes have also been formed in place of the old entrances to the stalls from the pit-box tier.

A number of minor improvements have also been made in different parts of the house, although perhaps these do not call for any special comment.

The carriage approach from Bow-street has been improved by the formation of extra doors, so that two lines of cabs and carriages can now "pick up" and "set down."

The arrangements for the electrical illumination of the stage had naturally to be remodelled and elaborated to meet the altered circumstances, the whole of the plant installed some two years back, of course, being re-used. Similarly, the steam appliances, telephone, speaking-tube, and other minor technical installations to be found on a modern stage were remodelled. The system of gas lighting was entirely abolished, and similarly the system of limelight for special effects.

II.

The structural alterations for the management, at the back of the house, comprise a number of important items: an entire remodelling of the storage and wardrobe arrangements, as well as the equipment of new workshops.

In the first place, the large property shop, which used to be over the auditorium, has been accommodated on a large additional floor, erected over the whole of the back wing of the building. This back wing has been remodelled, and now contains fine suites of rehearsal-rooms, both for solo artistes, for the chorus, and for the ballet, distributed on three floors, well lighted and aired, and equipped with all modern sanitary arrangements, an independent staircase, and an independent exit. The entire wardrobe, dressmaking, and tailoring department has been housed on the south side of the stage, in suites of rooms comprising three upper floors, having two independent staircases and inter-communication by means of a hydraulic lift.

On the north side of the house a suite of one of the upper floors has been retained as an armoury, a second has been remodelled for storage purposes, whilst a third now comprises a fine set of offices for the stage department. Here, again, an independent staircase connects the various floors, and inter-communication is also obtained by means of a new hydraulic lift. Below the stage level on either side of the house the various suites of rooms have been remodelled and modernised as far as possible; one suite next to the stage entrance, for instance, comprising the offices of the firemen, stage mechanist, and electrician, all in close proximity to one another, and in close touch with the stage manager's offices by the independent staircase just mentioned, and with the stage by a pass stairs on the other. Even the stage door has been remodelled, inasmuch as the doorkeeper's office now has a small waiting-room, and an entirely separate entrance, with timekeeper's office, has been formed for the working staff, by which means the crowding of the stage-door will be reduced. The back portion of the stage has been separated off from stage level downwards, with the view of forming a large scenery store built on fire-resisting lines, and equipped with all the necessary racks for holding the "cloths" used in the usual répertoire. Similarly, in the back wing, an old store, formerly known as the "infirmary," has been enlarged and remodelled with the view of forming a "wing" store. In spite of these two modernised storage arrangements, the accommodation for scenery at Covent Garden is still necessarily of a very limited character compared with that of Continental houses, and must remain a source of constant anxiety and trouble to a management who produce an average répertoire of twenty-five operas in the short space of ten weeks.

III.

We now come to the great alteration of the stage, an enormous undertaking at all times, but rendered particularly difficult owing to the short period available, the existence of a ball season during the major part of the winter, and the presence of an enormous stock of scenery, &c., which it would have been impossible to have moved out of the house except at a very great cost.

The alteration of the stage comprised entire gutting from top to bottom, so that nothing of the old stage from "gridiron" to cellar remains, with the small exception of a couple of wood fly galleries. Further, the alteration comprised the entire unroofing of the stage, raising the structure by 20 ft., and reroofing on modern lines. Further, it involved a considerable amount of excavation work, with a view of forming deep pits to take certain parts of the mechanism. An entirely new "gridiron" had to be constructed right across the stage; two "gridiron" galleries had to be constructed on either side, and a number of light connecting ways running across the stage. An entirely new stage, including all constructional parts, had to be provided, together with a mezzanine floor. The opening of the stage towards the auditortium had to be equipped with an enormous fire-resisting curtain (the largest in London), and a strong party-wall built from stage level downwards into the cellar. In connexion with this constructional work, the whole of the "gridiron" galleries, stage, and mezzanine had to be refloored, and the entire cellar or superficial area of the stage concreted over. The scene docks on either side of the stage had to be remodelled, one of them, for instance, being equipped with a large scene door with revolving shutters, measuring 28 ft. in height, another being provided with several floors to take planned scenery, such as rocks, groups, &c. The exit and entrance arrangements of the stage also had to be remodelled in such a way as to allow of greater convenience, and for the greater safety of the employés in case of accident.

In connexion with the constructional alteration of the stage, an entirely new stage equipment had to be provided on modern lines, everything above stage being now worked on the Brandt patent counterweight system, and everything below stage on the Sachs patent electrical bridge system.

Without entering into detail, the stage may now be described as comprising a series of six horizontal sections running parallel with the curtain line from front to back, each section being 8 ft. wide, and the whole being followed by a large back stage or rear stage. The first section contains nothing but a plain "carpet cut" and openings to take the old-fashioned "grave" trap, "star" trap, or other similar contrivances. The second and third sections comprise large bridges, which can be raised 6 ft. above the stage, or lowered 8 ft. below the stage, constructed in two levels, on the lower level of which appliances can be installed for the purposes of raising minor platforms above stage level, or sinking traps and the like. The fourth, fifth, and sixth sections comprise large bridges running right across the stage front, which can be raised 9 ft. above the stage, or lowered 8 ft. below. The back stage has no openings or mechanism, beyond certain trap-doors to a scenery store and the necessary electrical mechanism for raising and lowering scenery for storage purposes.

Between the various sections of the stage, long longitudinal flaps, 2 ft. wide, have been formed, and these can be easily opened to allow scenery to be passed through below for transformation scenes and the like. Each section is equipped with what is termed a pair of chariots, to hold "wing" lights placed on so-called wing-ladders. All the electrical bridges are worked from mezzanine level and from ordinary switch boards, and can be raised and lowered at various speeds, and take loads up to two tons. They can be moved without vibration or noise, at a cost of about ¼d. for power on a full rise when loaded.

Above the stage level, each section has its series of lines to take cloths, borders, &c. Each section has a batten, from which the electric battens are suspended; and each section has a large wooden lattice girder from which heavy pieces of scenery can be suspended. There are, on the average, about ten lines for ordinary battens, a girder batten, and a light batten to each section; besides these lines there are the equipments of flying apparatus and the like, whilst in front there are, of course, the necessary lines for tableaux curtains, act-drops, and draperies. Everything that is suspended from above can be worked at stage level, or at either of the gallery levels, every scene being counterweighted to a nicety, and one man can easily handle any scene. No mechanical contrivance is required, and in practice quite a number of scenes can be rapidly changed in a minimum of time.

Throughout the structure and mechanism steel has been used, iron pulleys, and wire cable; and the inflammable materials have been absolutely reduced to the flooring of the gridiron and galleries and the hard wood flooring of the stage and mezzanine. In other words, an absolute minimum of inflammable material replaces what was almost a maximum, and, seeing that the electric light has been installed, the risk of an outbreak of fire or its spread has been materially reduced.

The work was carried out under the direction of Mr. Edwin O. Sachs, architect to the Theatre Syndicate, Mr. Thomas Kissack acting as clerk of works. The general contractors were Messrs. Colls & Son. The ironwork contractors for everything above stage level were Messrs. Lindsay Neal & Co., Limited, whilst the entire complicated structural and mechanical ironwork below stage level, including the stage "bridges" and lifts, was by Messrs. Drew-Bear, Perks, & Co. The electrical power plant for the "under machinery" was provided by the Thames Ironworks Shipbuilding Company, Limited, of Blackwall; whilst the whole of the elaborate counterweight mechanism above stage level was provided by the Berlin stage mechanist and contractor, Mr. F. Brandt, who personally attended to the installation of his appliances in London.

The fire-resisting curtain was by Messrs. Merryweather & Sons, Limited, and the alterations in the auditorium by the Army and Navy Auxiliary Supply, Limited (manager in charge, Mr. Player).

The building operation is the second structural improvement to the Opera House undertaken since its ownership, dating from spring, 1899; and this second building operation has involved the further considerable outlay of approximately 25,000*l.*, or, by way of comparison, the cost of the total erection and equipment of a provincial playhouse.

THE ART UNION OF LONDON.

THE annual general meeting of members of the Art Union of London was held on Thursday last week in the lecture hall of the Society of Arts, John-street, Adelphi, to receive the report of the Council and for the distribution of prizes of works of art for the year 1900-1901.

We print the following extracts from the report of the Council :—

"The year just closed has been one of average success, and after setting aside the sum of 1,318*l.* for engravings, &c., the Council have been able to devote 544*l.* to prizes, making, with the consolation prizes awarded during the year to unsuccessful members of ten consecutive years' standing, a total of 201 prizes. Among the works of art specially selected by the Council for prizes are :—original oil painting, 'The Meadow Pool' (48 in. by 30 in.), by J. Clayton Adams; two bronze copies of the Chantrey bust of Queen Victoria; six terra-cotta copies of 'The Jester' statuette, by Mr. George Tinworth; six electro-bronze copies of the statuette 'Hebe,' by Miss Ruth Canton; six framed sets of electro-silver album mounts, by the late Miss Simpson; six dragon jugs in Copeland ware; twelve blue repoussée Doulton ewers; fifty bound sets of 'Scenes from English History,' after designs for Westminster Palace.

As the presentation picture for the forthcoming year the Council have commissioned Mr. W. Wyllie, A.R.A., to etch a plate representing the naval pageant in the funeral ceremonies of her late Majesty Queen Victoria.

The Council are glad to be able to state that the number and value of the oil and water-colour drawings selected by subscribers during the past twelve months from the permanent exhibition in the Society's gallery has been more than double that of any preceding year. The increasing demand for fine specimens of steel engraving, now a practically extinct art, gives a new importance to the Society's collection of steel plates—probably one of the best and most extensive in the world. There are no more perfect examples of the art of Lumb, Stocks, Sharpe, Willmore, Goodall, and other leading engravers of their time—and it was the golden age of English line-engraving—than those by which they are represented in the Art Union gallery; and since, from the durability that can be given to a copper plate by steel facing, it is in the highest degree improbable that the costly and laborious process of engraving upon steel will ever come into general employment again, the existing fine examples of the art must become more and more valuable as time goes on. . . . As a result of the deliberations of the advisory Council for Art appointed to reorganise the system of education at the Royal College of Art, many important changes have been made. In the new scheme the number of students is limited to 350, of whom 150 may be paying students. The College is divided into an upper and a lower school, each of these again divided into four sections: (1) Ornament and Design, (2) Drawing and Painting, (3) Modelling, (4) Architecture. An interesting decision may also be noted—that in future the diplomas of the College will not be awarded solely on the results of examinations; but that the Council of Advice and the professional staff will take into account the special aptitude of a student, not merely for the practice of art, but for teaching its principles and methods to others. Mr. Augustus Spencer retains the headmastership of the College, and Mr. Lantéri the Professorship of Sculpture and Modelling; Mr. Beresford Pite is appointed Professor for Architecture, Mr. Gerald Moira for Painting, and Mr. W. R. Lethaby for Design. The same committee of eminent artists which acts as a Council of Advice to the Royal College is entrusted with the function of advising in the matter of purchases for the Victoria and Albert Museum."

The report also stated that Lord Windsor has been elected as President.

In the drawing for prizes, the principal prize, "The Meadow Pool," by J. Clayton Adams, was won by Sir Thos. Lucas, Bart., of London.

BUILDING TRADE, STAFFORD.—The building trade is fairly maintained, the operatives generally are well employed, but the principal builders are not very busy. The County Council are enlarging both the County Council buildings and the technical school buildings. The local Corporation, at their monthly meeting on the 25th ult., sanctioned a contract for thirty-one new cottages for 6,050*l.* In the case of the cottages referred to we are informed that none of the local builders belonging to the National Builders' Association tendered, owing to the Corporation declining to supply them with quantities.

MARBLE HALL, DE KEYSER'S HOTEL.—In our account last week of the work just carried out at this hotel we stated that the electric fittings were by Messrs. Bennett. It should have been Messrs. W. A. S. Benson & Co., Limited, of New Bond-street.

HOW IS THE FUTURE WORKMAN TO BE TRAINED?*

THE best method of training young workmen has become a burning question, especially in the building trades, for it is generally admitted, by those qualified to form an opinion on the subject, that the skill in handicrafts displayed by the workmen of the present time compares very unfavourably with that of the workmen of a quarter of a century since; various attempts to arrest the deterioration have been made, but apparently without much success. It occurred to me that the Institute of Certified Carpenters numbers in its ranks many men peculiarly qualified, in virtue of their position and experience, to give opinions of value upon this question, and it is with a view of eliciting those opinions that I venture to lay before you the outlines of a scheme that may possibly furnish the solution to the problem propounded in the title of this paper. Before dealing with the proposition it will be as well to briefly summarise the conditions governing the training of young workmen formerly and to compare them with present conditions, and although these remarks are confined more particularly to carpentry and joinery, the broad facts are equally true in regard to other trades. The custom that used to obtain in old-fashioned workshops for training a boy entering these trades was to place him practically under the control or in charge of a good workman, usually the oldest or ablest hand in the shop, whose "bench-mate" he became. From this man the embryo carpenter and joiner learned the rudiments of the craft, partly by instruction, but chiefly by observation and imitation of his preceptor's methods, and if fortunate in ingratiating himself, he would be initiated into the personal "wrinkles" or trade secrets that were the especial possession of the old-time, experienced handicraftsman. But with the alteration in the methods of production introduced by machinery all this was changed; gradually the skilful handworker—the man who could take a rough drawing and translate it unaided into a highly-finished piece of work, or who could be entrusted to carry out successfully anything that might come to hand in the way of joinery—has disappeared, and the joiner of to-day is to all intents and purposes simply an accessory to a machine; and in most cases he is necessarily subordinate to the latter, not even being practically acquainted with its manipulation, which is entrusted to a special operative.

The machines produce parts of a whole with enormous rapidity and wonderful precision (subject, of course, to the ability of their operators), but as no single machine will complete any entire fitting, the chief duty of the modern joiner is to fill in the interstices, if I may so term them, between the several productions, and to adjust and fit up the various parts so prepared. All the expertness and knowledge which his prototype gained in the actual preparation of the several portions is denied the worker under the present system, which has thus developed a type of narrow specialists having an extremely limited range of usefulness; and, consequent on the want of general knowledge of construction inevitably displayed by workmen so restricted, further specialising has become necessary, and in this direction the latest product of the system is the "setter-out," a workman who confines himself to the drawing or marking out of the sizes of the several pieces preparatory to machine operations, and thus even the insight into the methods of construction which this work entails, with its educating influence on the mind, is withdrawn from the workman; and the result of such irresponsible deadening, monotonous, unthinking toil is to be seen in that apathy, want of intelligence, and carelessness with which the modern workman is charged. It is obvious that in the continuance of such a system matters will go from bad to worse, from the point of view of good handicraft. As the leaven of the old-time workmen gets exhausted, so the whole mass will settle down to deeper ignorance of their craft; and to place boys into such workshops and under such influences, and to expect them to acquire a comprehensive knowledge of the trade, is absurd; and the question arises, How is such knowledge, then, to be imparted? It would be worse than useless to suggest even a curtailment of the use of machinery, the tendency of the age being to substitute the latter for hand labour wherever possible; so if we cannot remove the initial cause of the mischief, we must counteract its ill effects by an antidote suitable to the conditions. It may be deduced from the above premises that to obtain a craftsman at once skilful, intelligent, and resourceful, the youth must be educated in, or made practically acquainted with, the whole of the craft which he is learning; not necessarily to be equally expert in all its branches, but to have sufficient general experience to enable him to successfully negotiate any unfamiliar work that may come to his hand. In workshops where machinery is employed, the acquirement of such knowledge is, as I have pointed out, practically impossible. There is no opportunity for instructing lads, unless a man is told off specially for the purpose, a method too expensive to be feasible, as in large establishments every man has his allotted work to perform, which is so interwoven or dependent upon that of others, that if it be neglected or delayed the whole establishment is more or less thrown out of gear. And most employers of labour, having realised the futility of attempting to teach trades in the workshop under present conditions, have abandoned the system of taking apprentices, with the consequence that whilst they are crying aloud for skilled workmen, boys are seeking in vain how to enter and learn the trade.

Attempts to remedy this state of affairs have been made by several public bodies, some dealing with boys before they enter a trade, and others after they have gained admission. The former necessarily confine themselves to the inculcation of the broad principles of precision and method underlying all trades, and also a little elementary instruction in the use of tools, &c.—excellent in themselves, but not sufficient to make a boy of immediate service in any trade, which is now the only key to entrance of the workshops of reputable firms. Of the latter, the most noteworthy are the Trades Training Schools of the Worshipful Company of Carpenters. These are probably the nearest approach to a solution of the problem that has yet been attempted, and, but for a difficulty incidental to the system, would doubtless provide a sufficient remedy. I cannot for obvious reasons say all that I should desire to in praise of these schools, and in drawing attention to the one serious obstacle in the way of their complete success, I do not intend to reflect in any way upon their value as a means of improving the knowledge and skill of those already engaged in the trades by supplementing their workshop experiences, but rather to indicate the direction in which they could be made even more useful. To render these remarks clear, I will briefly outline the routine work of my own class, the result of several years' experience, and which is fairly typical of the methods pursued in the other trade classes. The workshop is fitted similarly to that of a first-class builder's, with practically every necessary tool used in the trade, and drawing apparati are provided in addition; the work done is nearly all made full size, and under much the same conditions that obtain in a good-class hand shop. Lectures are given weekly, explaining the principles underlying the practice of the trade and their application in various familiar subjects. One night a week the student is instructed in, and practises workshop drawing; and once a week he is engaged in practical benchwork; the method generally pursued with respect to the younger lads being to instruct them first in the correct formation of constructive joints and various parts of framing, &c., more particularly those things that are now generally executed by machinery; and when these have been accomplished successfully, to entrust them with a complete piece of work, which includes the components they have already mastered in detail. This is made either full-size or to large scale, and the youth going steadily through this course gains in manipulative experience and constructive knowledge. The above routine does *not* apply to the men's classes, which are treated somewhat differently, but as these are beside the subject we are now considering, I will not trouble you with their details. The course I have described, you will probably agree provides a very complete preliminary training when it can be carried out in its entirety, but unfortunately it seldom can. The weak point

* A paper read on the 13th ult. at the monthly meeting of the British Institute of Certified Carpenters at Carpenters' Hall, by Mr. G. Ellis, Instructor at the Trades' Training School. The President, Professor T. Roger Smith, occupied the chair.

in this method is the continual interruption in the attendance, brought about by circumstances which are mainly, I am convinced (by the numbers of apologies received), beyond the student's control. The weekly interval arising between the cessation and resumption of work is a quite sufficient tax on the lad's memory, about instructions he has received, and when this interval is prolonged to from three to five weeks, as not infrequently it is, it is obvious that all such instruction must be repeated, to the occasion of much waste of time and interruption to the work of others. Added to this, another drawback to classes held in the evening is that they necessarily lengthen the day's work, already sufficiently long in most cases. The alternative I propose is, the establishment of an apprentice school (or series of schools) in industrial centres in connexion with the firms or workshops in the neighbourhood for the training of boys in the various trades, on lines similar to the Carpenters' Company's School but carried on during *ordinary working hours*. A boy desirous of entering any trade would be apprenticed as it were to the school instead of as formerly to an individual master for a stated period; he would become party to an agreement which would bind him to attend regularly daily from, say, 9 a.m. to 5 p.m., with the usual interval for meals, throughout the first year of his term, during which he would obtain continuous practical instruction of the best kind from properly qualified workmen, and also acquire methodical habits, and be subjected to a wholesome restraint, that can seldom be exercised in the ordinary workshop, but which would be of incalculable benefit to him in the future. From the school, as opportunity offered, he would be drafted into the workshop of one of the firms connected with the scheme, well-grounded in the rudiments of the trade, and familiar with the use of tools, and where his services could be at once utilised, to the advantage of his employer. During the second year of the term he should attend the school for further improvement, either three consecutive mornings, or three afternoons, per week, as might be the more convenient to his employer; the latter, having now become a party to the agreement, being compelled by its terms to provide the necessary facilities for his attendance, the remainder of the lad's time being spent in the employer's service under the usual conditions governing the trade. For the third and fourth years the apprentice should attend one afternoon per week, in which he would practice more advanced work, and finish off his education as an operative. Further theoretical and practical instruction should be open to him to enable him to qualify for advanced positions, but not be compulsory. This could well be supplied in the voluntary evening schools such as those of the Carpenters' Company. The course of training thus indicated, combining the theoretical and expert instruction of the school with the everyday experience of a competitive workshop, would, I am confident, produce artisans equal, if not superior, in skill and adaptability to those of former generations in less time, and therefore more economically, than the old method of personal apprenticeships.

The organisation, provision of funds, and limitation of numbers in such schools are points upon which there will probably be diverse opinions, and in offering the following suggestions, I rather indicate a possible arrangement than attempt to formulate a definite policy.

Expenses.—These could be largely met by: 1. Contributions on the part of parents, in the shape of premiums which might, for the benefit of smaller ones, be made payable by instalments; and 2. By contributions from the firms assisting in the scheme. These might take the form of a money grant, equal to the expense of training a boy in their own works, or in kind, as tools, materials, &c.; also by the purchase, at an agreed price, of such of the work made in the school-shop as would prove serviceable to them, what may be termed stock sizes and articles being made to that end. Of course especial care would have to be taken by the management that this method of raising income did not lead to any abuse of the system. Further, other employers, not parties to the scheme, but who might be desirous of obtaining qualified apprentices, could be asked to pay a specified sum bearing some relation to the commercial value of the apprentice chosen. In addition to these sources of income grants might be obtained from the funds provided by taxation for the furtherance of technical education, as the proper training of workmen is undoubtedly a national question.

Management.—This probably offers the most difficulty, but the scheme as outlined above will, at least in its initial stages, have to be carried out voluntarily, and those taking the lead in the preliminary formation will arrange this to meet their requirements; afterwards experience will indicate the best method to pursue.

To obtain the confidence of both employers and workmen the directorate should include representatives of each body, also representatives from any public body willing to give its adhesion to the scheme. Architects should be represented, as they perhaps more than any others are interested in the production of capable workmen.

In conclusion I ask for your impartial criticism of the scheme outlined, which has purposely been kept free from detail, for, such a variety of interests being involved, the latter is essentially a matter for collective council. I have anticipated, however, two possible objections that may be raised, and with the view of facilitating discussion, will state and reply to these before finishing.

It may be asked—Is it necessary to train youths to handwork if machinery is to supplant the same in the near future?

I would reply yes, unhesitatingly, for three reasons. 1st. The further introduction of machinery will be retarded by a supply of skilled handworkers, as, especially in the joinery trade, it is chiefly the dearth of the latter that makes it profitable to employ machinery, and it is opposed to the best interests of the trade, and also to the nation, that there should be persistent deterioration in skilled handicrafts. 2nd. In addition to the large establishments which increasingly use machinery, there are great numbers of smaller firms throughout the country who are often better supporters of good workmanship than their bigger competitors, and these depend largely upon handworkers, and will, if the supply continues to decrease, be absorbed the sooner, to the detriment of the trade. 3rd. The more extensive a man's capacity, the more readily will he find employment when one or other branch is over supplied, and thus prevent a general reduction in wages, which tend to fall automatically when there is any considerable excess of supply over demand in the labour market.

How is the overstocking of a favoured trade to be prevented?

The law of supply and demand would govern these institutions just as it does the present workshops; and, as a matter of fact, the directors would be in a better position to gauge the demand than are the parents under present conditions. Further, the institution could be the means of finding out the capacities of boys for certain crafts, and, by drafting them into those for which they were best suited, prevent the manufacture of "bunglers." This might be managed by providing for a short probationary course on entry, during which each boy should pass through the hands of various instructors, who would report upon his ability, and from these reports the management would deduce which trade he showed most aptitude for, and, provided there was an opening, he would be advised to follow up this particular trade, or, if conditions were not favourable, then the next one for which he seemed most fitted.

How and where would you organise your schools?

Probably it would be best to make a trial with one first, and if the venture were successful, others would be established where there was a demand.

The Carpenters' Company's Schools occupy a very central position in London, easy of access from all parts, and already possess the nucleus of an equipment and organisation such as is required.

I have, of course, no authority to state that the company would assist, but I feel sure, from the great interest that they have displayed in everything concerning the welfare of the trade, that if they were convinced that the scheme had the approbation of the building trade, they would not place any obstacles in the way of those wishing to give it a trial. Possibly they might be induced to take the initiative if they received guarantees of assistance from master builders; that they would from parents goes without saying.

THE LONDON COUNTY COUNCIL.

THE London County Council re-assembled on Tuesday after the Easter recess, at the County Hall, Spring-gardens, Mr. A. M. Torrance, Chairman, presiding.

Loans.—On the recommendation of the Finance Committee, it was agreed to lend Battersea Borough Council 3,515*l.* for brick sewer works; Shoreditch Borough Council 13,740*l.* for purchase of land, paving works, and erection of loose box at the wharf; Battersea Borough Council 10,600*l.* for electric-light installation and 3,230*l.* for provision of disinfecting station; School Board for London 37,069*l.* for schools; St. Pancras Borough Council 830*l.* for lighting of public buildings by electricity; and the Metropolitan Asylums Board 1,440*l.* for the purchase of land.

A City Street Improvement.—The Improvements Committee brought up a recommendation in favour of the Council contributing 16,800*l.*, one-half the net cost of the widening to 50 ft. of Blomfield-street, City, between East-street and Eldon-street, proposed to be undertaken by the City Corporation.

An amendment moved by Mr. Austin and seconded by Mr. Hubbard, to postpone the consideration of the subject was rejected by a large majority.

Dr. Cooper then moved that the recommendation be referred back, and contended that the City ought not to come to the Council for contributions towards City improvements until they brought up their assessments to a proper level.

Mr. Radford seconded the amendment, and said it was a great evil that the City should escape its proper obligations.

Mr. Davies, chairman of the committee, said they were unanimous in their recommendation, which would secure the completion of an improvement two portions of which had already been carried out.

The amendment was rejected, and the recommendation was adopted.

Purchase of a Motor-car.—The Fire Brigade Committee recommended the purchase, at a cost of 286*l.*, from the Locomobile Company of America of a motor-car for use by the Fire Brigade.

Mr. Beachcroft objected to going to America to purchase the car when any number could be obtained at home.

Mr. Gilbert said the Chief Officer had recommended that particular type of car.

The recommendation was adopted.

Theatres, &c.—The Theatres and Music Halls Committee recommended as follows, the recommendations being agreed to on certain conditions:—

"That Mr. Matcham be informed that, provided the works shown on the eight plans submitted by him in regard to a building to be known as the Hackney Empire, and to be erected with frontages to Mare-street, the Grove and Grove-passage, Hackney, are commenced within six months, the Council will be prepared to grant a certificate under Section 12 of 41 and 42 Vict., cap. 32, to the owner of such building.

That Mr. Collard be informed that the Council has no objection, so far as its regulations under Section 12 of 41 and 42 Vict., cap. 32, are concerned, to the arrangements shown on the plan submitted by him in regard to the new offices at London Exhibitions.

That Mr. Venner be informed that the Council has no objection, so far as its regulations under Section 12 of 41 and 42 Vict., cap. 32, are concerned, to the arrangements shown on the plan submitted by him in regard to the military tournament at the Royal Agricultural Hall.

That Mr. Caröe be informed that, provided the works shown on the five plans submitted by him in regard to a building to be known as the St. James's Parish Hall, and to be erected at St. James's, Upper Clapton, are commenced within six months, the Council will be prepared to grant a certificate under Section 12 of 41 and 42 Vict., cap. 32, to the owner of such building."

Greenwich Tunnel—Progress of the Works.—The Bridges Committee reported as follows:—

"We desire to call the attention of the Council to the progress that has been made in the construction of the Greenwich tunnel. The Greenwich shaft of the tunnel was sunk to the required depth on March 19 last, but little permanent work was done during the remainder of the month. The invert of the shaft is now being filled with concrete under compressed air at about 25 lbs. pressure. At the end of March the face of the tunnel was 842 ft. from the centre of the Poplar shaft, or more than two-thirds of the entire distance to the Greenwich shaft, and during the month a length of 260 ft. was completed. Since February 22 last the work has advanced 10 ft. every working day, which is an un-

precedented achievement in sub-aqueous tunnelling. The material passed through has been chiefly clay and close sand. The air pressure has varied from 19 lbs. to 25 lbs., and the weekly analyses of the air in the tunnel show a very satisfactory purity of the atmosphere. The estimated value of the permanent work executed up to the end of last month is 65,620*l.*, or about 60 per cent. of the contract amount."

Greenwich Tunnel, Electric Lighting.—The same Committee recommended and it was agreed that the offer of the Council of the Metropolitan Borough of Poplar to supply electricity to the Greenwich tunnel at 1·8d. per unit upon an estimated minimum quantity of 100,000 units per annum be accepted.

Having transacted other business, the Council adjourned.

APPLICATIONS UNDER THE 1894 LONDON BUILDING ACT.

AT the meeting of the London County Council on Tuesday the following applications were considered. Those applications to which consent has been given are granted on certain conditions. Names of applicants are given in brackets. Buildings are new erections unless otherwise stated :—

Lines of Frontage and Projections.

Peckham.—A four-story block of residential flats, with shops on the ground floor, and a scene-dock at the rear, on the north side of High-street, Peckham, at the corner of Stafford-street (Mr. A. Stuart for Mr. H. T. Holdron).—Consent.

Norwood.—A public hall and houses with shops on the west side of Norwood-road, Norwood, to abut also upon, Ulleswater-street, York-road, and Harpenden-street (Mr. J. S. Quilter for the freeholders).—Consent.

Clapham.—A two-story house, with a shop and gateway on the ground floor, on the site of No. 74, Southville, Wandsworth-road, Clapham (Messrs. H. Wakeford & Sons for Mr. G. Taylor).—Consent.

Lewisham.—A church on the east side of Trewsbury-road, Sydenham (Mr. G. H. Fellowes-Prynne for the vicar and churchwardens of Christ Church, Lower Sydenham).—Consent.

Dulwich.—A projecting wood and tile pent over the entrance to a dwelling-house on the south-west side of Townley-road, East Dulwich (Mr. F. A. Clark for Mr. W. A. Bois).—Consent.

Finsbury, East.—An entrance porch and three six-story projecting windows in front of Cocker's Hotel, Charterhouse-square, Finsbury (Mr. E. Haslehurst for Messrs. Wheeler & Warren).—Consent.

Hammersmith.—A one-story shop on the forecourt of No. 228, Uxbridge-road, Shepherd's Bush (Messrs. Holcombe, Betts, & West for Mr. J. Vellenzer).—Consent.

Hampstead.—An addition to No. 24, Belsize-grove, Hampstead (Mr. C. J. Strachan for Mr. G. R. Simmons).—Consent.

Hampstead.—Wooden hoods covered with lead at the entrances to Nos. 27 and 28, Lyndhurst-road, Hampstead (Mr. W. A. Burr for Mr. J. Tomblin).—Consent.

Lewisham.—That the application of Mr. A. Stuart for an extension of the period within which the erection of one-story shops on the west side of Catford Hill, Lewisham, at the corner of Ravensbourne Park, adjoining the arches of the London, Chatham, and Dover Railway Company, was required to be commenced, be granted.—Agreed.

Marylebone, West.—A two-story addition in front of No. 47, Hamilton-terrace, St. John's Wood, Marylebone (Mr. L. Solomon for Mr. H. J. Walford).—Consent.

St. Pancras, South.—A two-story oriel window in front of No. 167, Tottenham-court-road, St. Pancras (Mr. A. Whitelaw for the London and North-Western Railway Company).—Consent.

Wandsworth.—A one-story coal-order office building on the north-west side of Mitcham-road, Tooting, at its junction with Longley-road (for Messrs. R. Reid & Co.).—Consent.

Wandsworth.—Retention of a wood and slate porch at the entrance of No. 16, Abbotstone-road, Putney (Mr. H. G. Leslie for Mr. T. Osment).—Consent.

Hackney, South.—Residential flats, with shops on the ground floor, on the site of Nos. 112 to 120 (even numbers only, inclusive), Lower Clapton-road, Hackney, at the corner of Laura-place (Mr. H. Riches for Messrs. W. H. Tilley & Co.).—Refused.

Kensington, North.—An addition to No. 47, Ladbroke-square, Notting Hill, to abut upon Kensington Park-road (Mr. C. R. R. Clark for Dr. G. L. Turnbull).—Refused.

Kensington, South.—An iron and glass covered way at the entrance to No. 3, Pembroke-road, Earl's-court-road, Kensington (Mr. R. Phené Spiers for Mrs. Pidgeon).—Refused.

Lewisham.—That Mr. W. C. Green be informed that the Council is not prepared to accede to his request for permission to retain a shed at the side of No. 108, Catford Hill, in advance of the general line of buildings in Beechfield-road.—Agreed.

Marylebone, East.—An iron and glass covered way at the entrance to Bechstein Hall, No. 36, Wigmore-street, St. Marylebone (Mr. T. E. Collcutt for Mr. E. Bechstein).—Refused.

Strand.—A projecting metal sign at the Peninsular and Oriental Steam Navigation Company's premises on the north side of Northumberland-avenue, Charing Cross (Mr. T. E. Collcutt for the company).—Refused.

Width of Way.

Bethnal Green, North-East.—Twelve houses on the south side of Prospect-terrace, Usk-street, Bethnal Green, at less than the prescribed distance from the centre of Prospect-terrace (Mr. A. P. Stokes for Mr. C. Lacey).—Consent.

Greenwich.—That the request of Messrs. Pothecary & Co. for the Electric Timber Seasoning and Preservation Company, Limited, for permission to retain the forecourt fence in front of a building on the south side of River-side, Charlton, between the Albion Chemical Company's works and the silicate works, at less than the prescribed distance from the centre of the street, be acceded to.—Agreed.

Holborn.†—Buildings, to be used as warehouses, on the north side of Castle-street, Holborn, at less than the prescribed distance from the centres of Castle-street, Onslow-street, and Great Saffron Hill (Mr. E. J. May for Messrs. Falk, Stadelmann, & Co., Limited).—Consent

Hackney, North.—A one-story addition to No. 21, Sanford-terrace, Stoke Newington Common, Hackney, less than the prescribed distance from the centre of Sanford-lane (Mr. G. Treacher for the Governor and Committee of the Incorporated Society of Licensed Victuallers).—Consent.

Poplar.—A cottage, a barge-building shed, and a saw-mill on the west side of Moiety-street, West Ferry-road, Millwall, at less than the prescribed distance from the centre of the street (Mr. G. H. Lovegrove for Messrs. Flower & Everett).—Consent.

Deptford.—That the Council do make no order with respect to the application of Mr. J. Webster for Mr. J. E. Pryor, for consent to the erection of a one-story stable on the east side of a passageway leading out of Ashby-road, Brockley-road, Deptford.—Agreed.

Chelsea.—Greenhouses and a potting-shed at the Physic-garden, Queen's-road West, Chelsea, at the corner of Swan-walk (Mr. E. G. Rivers for the Trustees of the Apothecaries' Company's Physic-garden).—Refused.

Woolwich.—A one-story building at Warren-lane Works, High-street, Woolwich, at less than the prescribed distance from the centre of the street (Messrs. Kirk & Randall).—Refused.

Space at Rear.

Lambeth North.—A modification of the provisions of Section 41 of the Act with regard to open spaces about buildings, so far as relates to the proposed erection of a block of residential flats on the site of Nos. 101 and 103, Lambeth-road, Lambeth, with an irregular open space at the rear (Mr. C. Ansell).—Consent.

Whitechapel.—A modification of the provisions of Section 41 of the Act with regard to open spaces about buildings, so far as relates to the proposed erection of three houses, with shops, on the north side of Commercial-road, Whitechapel, at the corner of Church-lane, with irregular open spaces at the rear (Mr. H. O. Ellis for Mr. S. Kirstein).—Refused.

Deviations from Certified Plans.

Clapham.—Deviations from the plan certified by the District Surveyor, so far as relates to the proposed erection of an addition at the rear of No. 2, Currie-street, Nine-elms, Lambeth, at the corner of Everett-street (Messrs. Hibberd Brothers, Limited, for Mrs. C. Despard).—Consent.

Hampstead.—Deviations from the plans certified by the District Surveyor, so far as relates to the proposed erection of a building on the site of Nos. 74, 76, and 78, High-road, Kilburn (Mr. T. Ballantine for Messrs. Parrs' Bank, Limited).—Consent.

St. George, Hanover-square.—That the application of Messrs. W. H. Romaine-Walker & Besant for the Duke of Marlborough for an extension of the periods within which the erection of a dwelling-house on the south side of Curzon-street, Mayfair, on the site of Curzon Chapel and No. 30, Market-street, was required to be commenced and completed, be granted.—Agreed.

Lines of Frontage, Projections, and Width of Way.

Hampstead.—The retention of a raised pavement over an area on the west side of Goldsmith-place, Kilburn, at the rear of No. 36, High-road, at less than the prescribed distance from the centre of Goldsmith-place (Mr. W. T. Farthing for Messrs. Roper & Co.)—Consent.

Brixton.—A block of residential flats on the site of Nos. 400 and 402, Coldharbour-lane, Brixton, at less than the prescribed distance from the centre of the street (Mr. F. A. Powell for Mr. A. G. H. Brown).—Consent.

Hackney, South.—A church and school building on the site of Nos. 122 and 124, Lauriston-road, Hackney, at the corner of Rutland-road, at less than the prescribed distance from the centre of Rutland-road (Mr. P. M. Horder, for the trustees of the Trinity Congregational Church).—Consent.

Clapham.—Eleven houses with bay windows on the east side of Loats-road, and seven houses with bay windows on the west side of Lyham-road, Clapham (Messrs. Down Brothers for Mrs. R. S. Gray).—Consent.

Holborn.—Four one-story, and one three-story, oriel windows to an addition at the rear of No. 28, John-street, Bedford-row, Holborn, to abut upon Little James-street (Mr. T. J. Anderson for Mr. T. H. Pankhurst).—Consent.

Woolwich.—That the application of Mr. J. O. Cook for Mr. C. Beasley, for an extension of the period within which the re-building of the Red Lion public-house on the north side of Shooter's-hill, Plumstead, was required to be commenced, be granted.—Agreed.

Width of Way and Construction of Building.

Poplar.—An open iron shed at the Regent Dry Dock, West Ferry-road, Millwall, without the site of such shed being covered with a layer of good concrete at least 6 in. thick, with the forecourt fence at less than the prescribed distance from the centre of Regent Dock-road (Mr. T. J. Anderson for the Glengall Iron Works Company, Limited).—Consent.

Lewisham.—A temporary wood, iron, and glass photographic studio on the forecourt of No. 84, Kirkdale, Sydenham, with the forecourt fence at less than the prescribed distance from the centre of Peak Hill (Mr. J. R. Vining for Mr. E. J. Pritchett).—Refused.

Width of Way and Height of Building.

Bow and Bromley.—A warehouse building on the west side of Fawe-street, Morris-road, Bromley-by-Bow (Mr. Max Clarke for Spratt's Patent, Limited).—Consent.

Formation of Streets.

Woolwich.—That the application of Mr. J. O. Cook for Mr. C. Beasley for an extension of the period within which the erection of five cottages next the Red Lion public-house, Shooter's Hill, Plumstead, was required to be commenced be granted.—Agreed.

Fulham.—Extension of time within which to complete the formation of a street to lead out of the northern side of Fulham-road, Fulham, and to be named Upham-road (Mr. A. Blackford).—Consent.

Fulham.—Retention of a wooden fence across the entrance to Vera-road, Fulham, near its junction with Colehill-lane (Mr. E. Messiter).—Consent.

Wandsworth.† — That an order be issued to Messrs. Marler & Co., sanctioning the formation or laying out of a new street for carriage traffic on the Furzedown Park Estate, to lead out of the north side of Mitcham-lane, Streatham (Colonel R. J. Aspinall). That the name Welham-street be approved for the new street.—Agreed.

Kensington, South.—That an order be issued to Mr. E. J. Halsey refusing to sanction the formation or laying out of a street for carriage traffic to lead out of the south side of Sussex-place, Old Brompton-road, South Kensington.—Agreed.

Cubical Extent.

Kensington, South.—A building at rear of buildings on the south side of Sussex-place, Old Brompton-road, Kensington, to exceed in extent 250,000 but not 450,000 cubic ft., and to be used only for the purposes of a riding-school and repairing shop for motor-cars (Mr. E. J. Halsey for the Locomobile Company of America).—Refused.

Hackney, North.—A factory building with divisions to exceed in extent 250,000 cubic ft., and to be used only for the purposes of cabinet and joinery works, Tyssen-street, Dalston-lane, Hackney (Mr. E. O. Sachs for The Shannon, Limited).—Refused.

Dwelling-Houses on Low-Lying Land.

Woolwich.—Six buildings, to be used wholly or in part as dwelling-houses, on low-lying land situated on the north side of Bostal-lane, Abbey Wood, Plumstead (Mr. T. J. Young for Mr. W. Richardson).—Consent.

The recommendations marked † are contrary to the views of the Local Authorities.

BATHS, BECKENHAM.—The new public baths were opened at Beckenham on the 20th ult. The buildings, which, with a technical institute, have cost about 26,000*l.*, include a first-class, or covered, swimming bath, a second-class, or open-air, bath, slipper baths, and a laundry. The architect of the buildings was Mr. J. A. Angell, the Beckenham Council's Surveyor. The contractor was Mr. T. W. Jones, and the terra-cotta was supplied by Messrs. Gibbs & Canning. The mosaic and tiling work was carried out by Messrs. Minton & Co., the roofs were glazed with Messrs. Rendell's patent water-tight glazing, the hot-water heating work was executed by Messrs. Boaz & Sons, and the wrought-iron rails and gates were manufactured by Messrs. Hill & Smith. The electric light was installed by Messrs. Tamplin & Makovski. The clerk of works was Mr. A. J. Dorey.

Illustrations.

BRITANNIA ROYAL NAVAL COLLEGE, DARTMOUTH :

THE SICK QUARTERS.

THESE buildings are being erected by the Lords of the Admiralty on a sheltered site beyond the new college. The site falls rapidly towards the south, which keeps the wards well above the ground.

The wards are arranged in three blocks, one the general infirmary or non-infectious block with twenty-four beds, in which block also are the kitchens, stores, and servants' quarters for the whole building. The other two blocks are for infectious cases, and provide twenty beds each. Each large ward has a balcony towards the south, with a fine view towards the sea and the mouth of the Dart.

Consulting-room, dispensary, and dayroom for convalescents are provided in the block to the right, and separate dayrooms for infectious cases are provided in the infectious block, and also a small house for the doctor. At the west end is a small block for the accommodation of the infectious nurses.

The walls are faced with red bricks and Portland stone dressings, and the roofs covered with Delabole slates in graduated courses.

The buildings are warmed throughout by hot water, with combination stoves in the larger wards. The tower contains the tanks, which hold the water pumped up from the Sand Quay quarry.

The builders are Messrs. Higgs & Hill, and the clerks of works are Mr. S. E. Wallis and Mr. C. H. Hill. The architect is Mr. Aston Webb, A.R.A. The drawing is exhibited at the Royal Academy, the private view of which takes place to-day.

ST. MATTHEW, CHAPEL ALLERTON, LEEDS.

THIS church has been recently built from the design of Mr. G. F. Bodley, A.R.A. The plan comprises nave and aisles and chancel, and a south chapel. The nave is long and is of six bays. There is a detached tower connected with the church by a cloister-like passage. The building is of strictly English character and is of the Decorated style. There is some excellent stained glass and the roofs are painted throughout.

The church is continuous, there being no chancel arch, and only a high and open screen dividing the nave from the chancel. On this screen the organ is placed after a manner usual in times past. This position is good acoustically, and the instrument does not obstruct the floor space. There is much to be said for this position of the organ, answering, as it does, for both nave and chancel. The work has been carried out by Messrs. Stephens & Bastow, of Bristol.

HAYE'S LODGE, NEAR DERBY.

THIS house has been built from the design of Mr. G. F. Bodley, A.R.A. It has an exterior of red stone, with deep bay windows having mullions and transoms, and some stained glass with armorial shields.

The character is that of an old English mansion, quiet but dignified. There is a garden, planned by the architect, in the style harmonious with old English domestic architecture. There is a good deal of oak panelling. The house has been built for Mrs. Sacheneral Bateman, on the site of a former building.

BOOKS RECEIVED.

FERGUSSON'S SURVEYING CIRCLE AND PERCENTAGE TABLES. By John C. Fergusson. (Published by the author.)

ST. DAVID'S: THE CATHEDRAL AND SEE. By Philip A. Robson, A.R.I.B.A. (Geo. Bell & Sons.)

TRANSACTIONS OF THE MONUMENTAL BRASS SOCIETY. Vol. IV. Part 3.

NEW BUILDINGS, ABERGAVENNY Y.M.C.A.—The new buildings of the Abergavenny Y.M.C.A. were opened recently. The structure, which is situate in Frogmore-street, is erected from plans by Alderman Edwin Foster, Abergavenny. The accommodation includes a large assembly hall, reading-room, class and Bible-class rooms, anterooms, &c. The contract has been given to Mr. T. S. Foster, the price being 1,430*l.*

Books.

Works in Architecture of Robert and James Adam. Reprinted by Thézard *fils.* Books 2 and 3.

WE mentioned in a former notice this republication of the great work of the Adams, which is being carried out by M. Thézard simultaneously in France and England, with a French and English text. The book is in fact as nearly as possible a facsimile of the original publication. It is being issued in parts, and we have now before us Parts 2 and 3.

Book 2 contains the elevations and details of Kenwood, one of the most elegant, in its formal way, of Adam's mansion designs, with its South front with carved pilasters contrasting with the plain rusticated basement story beneath them. A great many of the furniture designs are also given.

Book 3 contains the elevation of Luton Park (the plan is given in Book 2), a perspective showing Whitehall with the Admiralty, and the elevation of the Society of Arts house in John-street.

Considering the part which Robert Adam (for his brothers were but his shadows) played in the national architecture of his day, his great publication is to be regarded as a work of permanent value, and those who attach importance to their architectural library may feel glad that they have here an opportunity of securing what is essentially Adam's book, only on new paper, considering that copies of the original are hardly to be had now.

The Decorative Work of Robert and James Adam. London : B. T. Batsford. 1901.

THIS is a re-issue, with some alterations, of a folio volume of twenty-five plates of decorative subjects from Adam's works on architecture, which was issued by the present publisher a good many years ago, and is now out of print. One plate of the old selection has been withdrawn—the elevation of Sion House, and six new ones added, making a folio volume of thirty plates, the subjects of which are confined to furniture and decorative work, excluding architecture proper.

The fashion for the style of decorative work invented by the Adams has been so decidedly revived at present that there is no doubt that a republication like this will be welcomed by many; and even if we do not approve the school of ornament represented by it, one must admit that the work of the Adams in this class is remarkable for refinement and grace of treatment of the materials employed.

It should be remembered, however, that these materials are not those which go to form the highest class of ornament; they are mostly based on the imitation of artificial objects, and they show a vast amount of repetition of the same idea and the same details with only slight variations of arrangement. Such a style can never take rank as among the higher class of architectural decoration; it has no grandeur of line and no intellectual invention; and the time will come when this will be recognised, and the fashion for it will subside again. Meanwhile, Mr. Batsford's book will no doubt be useful, and will also have a permanent value for libraries, as a representation of this particular school of ornament.

The New Education: Manual Training; Woodwork. By RICHARD WAKE, Instructor to the Hull School Board. London : Chapman & Hall, Limited. 1899.

Art Crafts for Amateurs. By FRED MILLER. London : H. Virtue & Co., Limited. 1901.

IF it be possible to treat a practical subject too thoroughly, Mr. Wake may have laid himself open to that criticism. Both master and pupil are subjected by him to a system from which no loophole of escape presents itself. Yet it must be remembered that the teaching of bench-work in Board schools is in its infancy, and that the master has often to learn as well as the pupil. For it may be quite possible that the practical man has never before had to impart his knowledge, while, on the other hand, the trained teacher may find his subject a novel one. The method which is here proposed has been in operation, and has, upon the authority of the author, been found successful. Experience is the only possible test, and in this way Mr. Wake has the advantage of us. Yet we may say that the system advocated, if it appears to err toward an excess of minutiæ, grasps firmly the desirable principles, setting forth with clearness the kind of work that a particular tool is especially adapted for, and the best way of getting this especial kind of work out of it. The explanations are assisted by very good photographs of boys working at the bench, marking the positions necessary for the various tools and processes. We are quite sure that the introduction of some method would be found most desirable in many of the continuation classes, particularly those which are held in some of the outlying country schools, where we have noticed the want of it, and we shall take the opportunity better to inform ourselves upon the method in question by introducing it into a class of this description.

It would be difficult to find a book presenting more obvious contrasts to that just described than "Art Crafts for Amateurs."

The earnestness of the amateur would seem to exist in an inverse proportion to the opportunities at his command towards conquering his difficulties. He consequently possesses an inordinate craving for short cuts and sketchy treatment, forgetful that these are the privileges of the experienced. As Mr. Miller's book is ostensibly written for this class of worker, it would be pedantic in us to advocate the desirability of a knowledge of tools and materials, or a thorough acquaintance with old and approved examples before rushing into modern and original design. Yet a student would thus learn what forms are by their nature most suitable to the particular craft he professes, and further, what are the designs that have successfully withstood the criticism of ages. He would later on find his original faculties burst into bloom with a vigour that the pruning-knife can alone create. But he who engages in wood-carving or in copper-beating in the light of a healthy and blameless recreation will find many designs, both old and new, in Mr. Miller's book from which he may make selection, and a short and explicit introduction to the processes involved.

The Cottage Homes of England. By W. WALTER CROTCH. Second edition. London : P. S. King & Son.

"THE Case against the Housing System in Rural Districts" is the supplementary title given by the author to his small book, which is an explanation, and at the same time an *exposé* of the working of the Housing Acts of 1890 and 1900. So little time has elapsed since the passing of the amended Act, that criticism must be justified by inference rather than by experience.

These Acts, it may be remembered, have been passed with a view of enabling a Parish Council to provide the accommodation necessary for parish requirements by means of a loan sanctioned by the Local Government Board. But before these two bodies can be brought together there are obstacles to be surmounted which, in the author's opinion, are well-nigh insurmountable. The Rural Council has, in the first place, to be brought into line, and this in turn has to satisfy the County Council, which has again to satisfy the Local Government Board, a curriculum that has been known to extend over a space of five years.

The later Act has reduced the number of formalities, yet the bodies named still remain interested. Mr. Crotch thinks that the County Council might well have been kept out of the negotiations, unless called in as referee by a Parish Council in the event of the District Council proving intractable, for this latter is sometimes obstinately opposed to an increased rate.

These Acts, however, as the author admits, do not touch the question of cottage homes in the more actual sense—the cottage, that is, of the farm labourer. Neither sentiment nor obligation must be reckoned as a serious factor towards the preservation of these. A rental of one shilling a week allows no margin for repairs, and these cottages are in large numbers either falling into a condition that renders them scarcely habitable, or are disappearing altogether.

The Housing of the Working Classes Act. By CHARLES E. ALLAN, Barrister, assisted by FRANCIS J. ALLAN, Medical Officer of Health to the City of Westminster. Second edition. London : Butterworth & Co. 1901.

THIS is a useful and clear work, not overloaded

with detail. The introduction gives a sketch of the legislation which has taken place during the last half century, and is then followed by the Acts duly annotated. Those who have to consult the statutes on this subject will find it a book brought up to date. We have the usual complaint, however, to make that the price, seven shillings and sixpence, is excessive. These legal handbooks, intended not only for lawyers but to many of the general public, should be published at a more reasonable price.

The Workmen's Compensation Act, 1897: a Plea for Revision. By R. T. THOMSON. London: Effingham Wilson. 1901.

So much has been written upon the many anomalies of the Workmen's Compensation Act that the publication of this work seems scarcely necessary. The first chapter appears to be a reprint of an article in the *Nineteenth Century* for June, 1898, since which date the House of Lords has given somewhat more coherence to the interpretation of this statute. The criticisms contained in this little book are sensible enough, but whether they were worth publishing, having regard to the fact that every newspaper in the country has been filled with similar comments, may, perhaps, be doubted.

Engineering Estimates and Cost Accounts. By FRANCIS G. BURTON, A.S.A.A. Manchester: The Technical Publishing Company.

IN these days of international competition in the engineering, as in other industries, to be up to date in method as well as in equipment has become a matter of stern necessity; and the author's experience is placed at our disposal with a view to rendering assistance in regard to the matters indicated by the title of his treatise. Points liable to be overlooked, but really requiring careful attention, are emphasised; traps and pitfalls into which the unwary and inexperienced estimator may fall are exposed; and many useful hints and valuable information given.

The difficulty of dealing with and anticipating fluctuations in wages is alluded to, and many, unfortunately, besides engineers will confirm the remark that "the modern practice of trade-unions is not guided so much by fixed principles or general considerations, as by the opportune advantages to be obtained from the exigencies of the employers." In a recent paper dealing with this subject, we were told of an employer being calmly informed by his men (on his pointing out to them that their action would inevitably drive away his trade) that they could follow trade if it went elsewhere. But even in this respect the workmen of the States are more advanced than in this country, as the recent prolonged struggle in the building trade at Chicago testifies.

Useful hints are given to those about to tender for Government work for the first time. "No mistake must be made in supposing the stringent requirements to be a mere bogey intended to frighten the builder into reasonably good behaviour; the clauses will, on the contrary, be strictly enforced, and nothing will be accepted unless it is of the very highest class in both material and workmanship." The foregoing refers particularly to shipbuilding, but every one who has any acquaintance with Government contracting knows that it is of very general application.

Mr. Burton ventures to give some advice, for which, seeing that he adopts a somewhat apologetic tone in tendering it, he evidently does not anticipate a ready acceptance. He considers that the managing staff often have to work too much in the dark after a certain point, especially in regard to such matters as the amount or percentage employed to provide for the item of "profit" in the preparation of estimates; and he pleads for "free and cordial co-operation between members of the staff on matters of cost and finance." In unwelcome contrast to this, and in questionable taste, is the cheap sneer in the preface at those "whose knowledge of business is limited to the making of artistic ticks and the checking of additions."

Spons' Architects' and Builders' Price Book, with Useful Memoranda and Tables. By W. YOUNG, architect. Twenty-eighth edition. Edited by CLYDE YOUNG, A.R.I.B.A. London: E. & F. N. Spon, Limited, 125, Strand. 1901.

THIS volume, although professing to be an "annual" one, is "annual" only in name, and, as far as its use as a price book is concerned, one edition is as good as another. Even the time-honoured preface, with its reference to "additional information," appears as usual, the only variations being in the date and the initials, the latter caused by the lamented death of its late editor.

The "editing," as far as we can gather, consists in the displacement of a few special manufactures and the substitution of others, but even these are very few. As a general work of reference it is very useful, but as a price-book its usefulness is *nil*, and we can only reiterate what we said respecting the immediately preceding edition: that the book should either be thoroughly revised—in fact, in a great part rewritten and rearranged—or, on the other hand, the price-book omitted entirely, thereby reducing the bulk about one-half and issuing it boldly as a general handbook with the "useful memoranda and tables" as the chief feature.

A Handbook of Practical Gasfitting for the use of Students, Plumbers, Gasfitters, and Gas Managers. With 143 illustrations. By WALTER GRAFTON, F.C.S. London: Published by B. T. Batsford. 1901.

THIS book contains much useful information relating to gasfitting and gas appliances. It is divided into twenty-three chapters, and concludes with a satisfactory index. The first chapter is devoted to "regulations affecting gasfitting" and the third to "the law affecting gas supply." Other chapters deal with meter fixing, gas fires and burners, incandescent gas lighting, and the materials and tools used in gasfitting. The final chapter discusses the lighting of railway carriages and signals.

The author is a recognised authority upon the subject of gas lighting, and gasfitters and others who intend to study gasfitting in practical detail will find the book most serviceable. We fully agree with the author in his statement that "there is plenty of improvement needed on the part of many employed in running services and erecting fittings," and that "intelligent ideas on proportioning services, and on the principles of combustion and burners, will tend to the employment of fittings and burners giving higher units of efficiency." The author might in many instances improve the wording of his sentences, although it is not difficult to grasp their meaning.

In the chapter on "gas supply for dwelling-houses" we read that "many landlords will not pay for iron piping, principally because of damaging the walls, consequently the work has to be done with composition pipe, which is far inferior and cheaper. This is used entirely from outlet of meter, but no soft piping should be fixed in plaster, where it may eventually get damaged by nails. In Scotland this method is much practised. Iron piping is the best material to use, and in the end gives the greatest satisfaction." The author then proceeds to describe in detail how to fit a house with composition pipe.

Many of the illustrations are already familiar to our readers, as they are merely reproductions of figures to be found in various trade catalogues; and a few of them, such as those on pages 211 and 306, are reduced to so small a scale as to appear ridiculous. Considered as a whole, the book is a welcome addition to the existing literature on the subject, and as a work of reference will be found useful in the office of every architect and builder.

"*Who's Who?*" 1901. London: Adam & Charles Black.

LOOKING at this annual publication from our own point of view, we find, as we suppose members of other professions or pursuits will find, a curious irregularity in regard to the degree of celebrity which entitles a man to notice, which seems to argue that the length and importance of a notice, or its existence in this book at all, must be a good deal influenced by the personal ambitions of the people who desire to be noticed. So obscure indeed are some of the names included, that it may be doubted whether they could be said to be known at all until they got between the covers of the publication in question. This perhaps is one gate of Fame—send your biography to the publishers of "Who's Who?"

Looking through the architects, we find among the architects whose names are *not* mentioned Mr. Brydon, the architect of the new Government Offices; Mr. Emerson, the President of the Institute of Architects; Mr. Caröe; the late Mr. Young, the architect of the new War Office, who was still living when this volume must have been in process of compilation; Mr. Philip Webb; Mr. Lethaby; Mr. Ricardo, &c. Mr. Belcher's name and address are given, but no further information. On the other hand, we find people of much less importance noticed at some length. The publishers or editor ought to endeavour to find out who are the really eminent persons in a profession, and deal with them accordingly, so as to observe a due proportion in their notices.

TRADE CATALOGUES.

THE Acetylene Corporation of Great Britain Limited, send us a price-list of "Auto-Simplex" generators and other apparatus for acetylene gas lighting. If 20 c.p. burners are employed, the cost of an installation to feed 100 burners for six hours is quoted at 85*l.*; for 200 lights for six hours at 150*l.*; and for 500 lights for six hours at 330*l.* The price of carbide purchased in quantities of not less than 1 cwt. is quoted at from 2¼d. to 2¾d. per lb., according to the distance from the storage depôt. The corporation supplies all the common accessories for the use of acetylene, and also portable lamps. We are glad to observe that these portable lamps are not recommended, for although we are acquainted with most of the acetylene table lamps on the market at the present time, we have never met with one suitable for daily use in a dwelling-house. When the lamps are recharged the odour of the gas penetrates the entire building, and most of the lamps have other objectionable features.

Correspondence.

To the Editor of THE BUILDER.

THE R.I.B.A. COUNCIL.

SIR,—It is somewhat remarkable to note what an unrepresentative list of Associate Members nominated for the Council of the R.I.B.A. is presented to the general body of the Institute, from which to select four names. In my humble opinion, only the first name should receive support, the remaining six having been in the class of Associates for the past eleven to thirteen years, paying the minimum subscription and receiving practically the maximum advantage. Of the six names I refer to, five are old and much-valued friends of mine, who ought, without exception, to be in the class of Fellows, and upon the Council as such.

This anomaly is absolutely reprehensible; three of these gentlemen are in the forefront of the profession, their names are household words, their works are well known and appreciated, and their practices large. I am sorry that they should exhibit such a lack of loyalty to the body politic they profess to adorn and assist.

Their position is but a sample, as there are hundreds of others in the general body, who assume a similar attitude; the financial condition of the Institute, and its progress would be much facilitated by a little thoughtful loyalty on the part of these "aged" Associates.

It seems to me that the new Council should take means to make this state of things impossible in the future, and that means should be devised by which it is obligatory upon Associates to proceed to full membership, and so contribute to the wellbeing of our representative body. I respectfully commend this to the notice of the Council and to the attention of the general body in particular.

A CANDID CRITIC.

THE MANCHESTER FIRE STATION COMPETITION.

SIR,—I have not seen the amended instructions issued by the Manchester Corporation for the intended competition for the new fire station, but, as far as I can gather from the professional papers, the essential objection to the competition remains unaltered—viz., the condition that the architect whose design is awarded the first premium may not be appointed architect for the building, the Corporation reserving to themselves full power to appoint any architect.

It is probably only locally known that an architectural department is to be formed at the Manchester Town Hall, with a prominent architect as chief. It is quite possible, therefore, for the Corporation to pay the premiums, to take the brain-work of competitors, and hand over the working-out to the new department.

Should that occur, the amendment of the 3 per cent. commission first offered to 5 per cent. would be a very nominal improvement.

The whole thing as it at present stands is very speculative; every competitor has to face the possibility that, should he succeed in taking the first premium, he may be appointed architect for the carrying out of his design, or he may be politely told that his services are not required, as the new department will carry it out.

To deliberately face eight or ten weeks' work and considerable expense with such alternatives is not very attractive. ARCHITECT.

THE DESIGN OF THE PIANOFORTE.

SIR,—In the notice in your issue of March 23 of the visit paid by the Architectural Association of London to Broadwood's Exhibition doubt is expressed of the desirability of any departure from the usual shape of the horizontal pianoforte. The remark that the square shape appears to necessitate "padding" is very natural, seeing that the wing form is universally adopted; but I shall be glad if you will permit me to say that the conclusion is not justified by a closer inquiry.

The shape of the harpsichord is the natural result of the disposition of the strings. The long bass strings run at right angles to the keyboard, the other strings are parallel to them, and the graduated sounding lengths give a sweep to the bridge which is closely followed by the outline of the case. The vibrations of the strings are feeble, and can set in effective motion but a very limited extent of very thin sounding-board.

The grand pianoforte followed the lines of the harpsichord, and the wing shape was, therefore, its natural form. The more powerful vibrations of the strings, however, permitted the use of a larger sounding-board and the elegant lines of the harpsichord were lost. When, later, the strings were crossed (or overstrung), the bass bridge took a more advantageous position upon the sounding-board, which was broadened out at the tail end to the shape which is now familiar. The pianoforte referred to in your notice of the visit is the result of an attempt to utilise the still greater sound-board afforded by a yet further expansion to the rectangular shape, which, for decorative purposes, Mr. Ashbee preferred.

There is no "padding" about this instrument. By the disposition of the strings, the increased dimensions are utilised with very marked gain in power, due to the larger sounding-board, which also, by reason of its greater sensitiveness, produces piano effects of peculiar freedom and beauty. As an experiment the instrument is a success, and in Mr. Ashbee's hands it will become a thing of beauty to the eye. Some persons will, no doubt, object to the shape of such a pianoforte, and to them I would reply that, though an excellent pianoforte can be made upon the usual lines, the square shape produces a still better musical instrument.

GEORGE ROSE.

The Student's Column.

SANITARY FITTINGS AND PLUMBING.

17.—TROUGH-CLOSETS, LATRINES, AND WASTE-WATER CLOSETS.

TROUGH-CLOSETS.—Trough-closets are a simple kind of water-closet, and have been extensively used in connexion with factories, barracks, schools, and other buildings, where accommodation is required for a large number of persons, and where simplicity of construction, strength, and automatic action are desired. They consist of a trough—generally of salt-glazed fireclay—with a weir at one end, so that a certain amount of water is always retained in the trough for the reception of the soil, and with a flush-pipe at the other end fed from a cistern usually automatic in action. Longitudinal and transverse sections of a simple type are given in fig. 1; the top of the trough is open from end to end, the seat being simply a continuous wood rail bolted to the edge of the trough. A course of splayed bricks is shown along the back to prevent liquid or solid matter falling into the space behind the trough. As dirt from the floor of the closet is certain to be blown or swept into this space, it is a good plan to fill it with fine cement concrete after the trough has been tested; the angle above the top of the trough can then be finished with glazed bricks or with a triangular fillet of cement. The water from the flush-pipe is in this example discharged through a bent inlet nozzle opening near the bottom of the trough—an arrangement which reduces the splashing and ensures a better flush.

The troughs are generally made in lengths of about 2 ft., but in order to reduce the number of joints special troughs can be obtained up to 4 ft. 6 in. long. The troughs must be set perfectly level; if the outlet end is too high the soil will be difficult to flush out, and if it is too low, the depth of the standing water will be reduced towards the inlet end. The joints ought to be made with neat cement, and the troughs tested by filling them with water after plugging the outlet.

The points to be observed in the design of troughs are (1) that the sides of the trough above the water level are so designed that they cannot easily be fouled, (2) that the depth of the standing water is sufficient to cover the soil, while at the same time the quantity of water is not unduly increased, and (3) that the shape of the trough is such that the contents are easily flushed out. Various sections are given in fig. 2, E being peculiar in having a perforated flushing rim along both sides.

Trough-closets are also made with a siphonic discharge. Duckett's apparatus is shown in fig. 3. The trough is of improved shape, and has a channel bolted along the back edge to serve as a flushing rim and as a conduit for the water. The inlet A is 3 in. in diameter, and is supplied from an automatic siphon flush-tank. An air-pipe B is carried up from the top of the bend between the two outlet-traps, and is so connected to the flush-tank that siphonage in the trap C is stopped before all the contents of the tank have been discharged; the last portion of the flush is therefore available for recharging the trough. The whole of the flush-water passes through the troughs, and the outlet-traps can, of course, be turned in any direction.

Instead of the continuous open top, trough-closets are often made with the top of each section partially covered, so that wood seats of ordinary form can be attached. In other cases the trough is replaced by a round or oval tube, with a junction at the top for the reception of the seat, as shown in fig. 4. The vertical portion ought to be specially designed to prevent fouling. The space behind such closets cannot possibly be kept clean, and ought therefore to be filled with fine concrete. Fig. 5 shows another modification, in which the only standing water is in the dished junction piece under each basin. It cannot be recommended.

Trough-closets require a large volume of water. A discharge of fifty gallons is sometimes allowed for ranges up to 12 ft. in length, seventy gallons for ranges from 13 ft. to 17 ft. long, and 100 gallons for ranges from 18 ft. to 22 ft. long. These quantities give a minimum flush of about ten gallons per seat, but smaller quantities down to six or even four gallons per seat are often allowed, although of course the result is less satisfactory. The discharge of these large volumes of water causes a considerable amount of splashing, which is often very annoying. The flush-tank may be regulated to discharge automatically at stated intervals. No hard-and-fast rule can be laid down as to the number of flushes required daily, as so much depends upon the amount of usage which the closets receive; but it is always best to err on the side of cleanliness. Sometimes a "controlling vessel" is fitted to the trough and so arranged as to receive the overflow of water caused by the deposits. The filling of this vessel brings on a supply of water to the flush tank (which has already been partially filled through a pipe controlled by a ball-tap), and starts the siphonic action. The frequency of the discharge is thus automatically regulated by the usage of the closets. An objection to such an apparatus is that the closets may remain unflushed for long periods, although containing a considerable amount of objectionable matter.

Latrines.—Trough-closets are far from satisfactory. The standing water is as a rule too shallow to cover a number of deposits, and emanations from one part pass through the whole range, thus increasing the risk of infection. It is much better to have a range of separate basins trapped from each other by the standing water. The name "latrines" may with advantage be confined to closets of this kind in order to distinguish them from trough-closets. They are discharged by siphonic action, which is started by the discharge from a flushing-tank, generally automatic, but sometimes operated by a pull. Fig. 6 shows the longitudinal and transverse sections of a range of latrines of this kind. The basins are usually fixed 2 ft., 2 ft. 3 in., or 2 ft. 6 in. from centre to centre, but longer connecting pipes can be obtained if required. The flush-pipe A for ranges of not more than six closets is 2½ in. in diameter with 1¼-inch branch to each basin. The basins are provided with flushing rims, and contain a considerable quantity of water, which is held up by the weir of the siphon at B. Below the long leg of the siphon a trap C is fixed, of P or S shape, fitted with a nozzle for an anti-siphonage D. The connecting pipes E and the siphon and trap are 4 in. in diameter. From the top of the siphon bend a ¾ in. air-pipe F is carried up and either bent down into the cistern or connected with the flush-pipe, in such a manner that the siphonic discharge of the closets will cease at a certain point in the discharge of the flush-tank; the last portion of the flush is thus utilised for recharging the closets. It is difficult to regulate this exactly, and the standing water is often considerably below the level of the weir at B. To obviate this, a small vessel with a separate supply-pipe controlled by a ball-valve may be advantageously fixed on the floor at one end of the range, and connected to the junction-pipe under the first basin. The ball-valve is arranged to shut off the supply when the water standing in the range approximates to the level of the weir at B. With high-pressure supplies secret waste may easily occur, and many water companies consequently object to the arrangement except in the case of buildings supplied by meter.

The connecting-pipes in fig. 6 are above the floor, which is a convenient position when the range is in an upper story, but the space behind the pipes cannot possibly be kept clean, and ought therefore to be filled with concrete. The stopper G facilitates access to the connecting-pipes. In many cases longer hoppers are used and the connecting-pipes are laid below the floor. It is obvious that when (as in fig. 6) the hoppers are fixed on the top of the pipes the contents of the first hopper are drawn under each successive hopper, and perfect isolation is not obtained. A more recent form of latrine has the pipes behind the hoppers, each hopper having an oblong outlet at the back fitting into a corresponding socket in the side of the pipe. This ensures an almost perfect isolation.

As a rule, not more than six closets are fixed in one range, but occasionally as many as ten closets have been flushed from one tank. Where more than six closets are used, the tank must be at or near the middle of the range. For such ranges the tanks are of large size, and care must be taken in designing the building to allow sufficient height at the points where the tanks must be fixed. The height from the floor to the bottom of the tank is generally about 6 ft., but some makers recommend 8 ft. or even more, to which must be added the depth of the tank and sufficient space above for removing the parts of the siphon in case repairs are required; the dome of an annular siphon is very nearly equal to the depth of the cistern, and space must be allowed for removing this. The following dimensions of the "Tubal" closet-range may prove useful:—

Number of basins	3	4	5	6	7	9	10
	in.	in.	in.	in.	in.	in.	in.
Connecting-pipes	4	4	4	4	6	6	6
Trap	5½	5½	5½	5½	8	8	8
Flush-pipe, Vertical	3	3	3	3	3½	3½	3½
,, Horizontal	3	3	3	3	3	3	3
Tank, Length	30	28	30	36	36	44	42
,, Breadth	17	17	17	18	20	20	20
,, Depth	24	30	30	30	30	30	36

The hoppers are usually of salt-glazed or enamelled fire-clay, and the connecting-pipes and traps of similar material or of glass-enamelled cast iron.

Latrines are often fixed in well-ventilated outbuildings with thin walls, and are thus practically unprotected from frost. The result has been that in many cases the basins and connecting-pipes have been cracked in severe weather. It is, therefore, advisable to use fittings made of strong fireclay of considerable thickness, and also to adopt some arrangement whereby the water can be drawn from the range, the outlet-trap being, of course, left charged to prevent the passage of sewer air into the buildings. In Duckett's siphonic latrines a cock is fixed in the air pipe connecting the siphon and tank; when this cock is closed and the flush tank discharged, practically the whole of the water is siphoned out of the latrines.

Wash-down closets are often fixed in ranges to form latrines, and flushed by a single tank. The outlets of the closet-traps may be flanged and bolted to a cast-iron pipe above the floor, or may be connected by short branch pipes to a pipe laid below the floor. The flush-tank should be large enough to give a flush of five or six gallons to each basin at each discharge.

Flush-tanks.—Flush-tanks for trough-closets and latrines are almost invariably of the

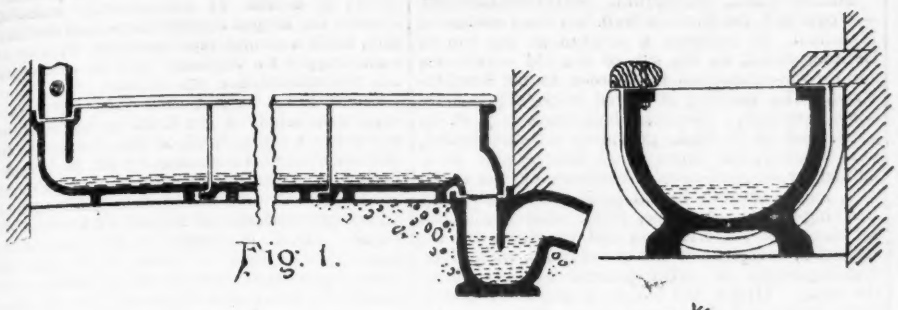

Fig. 1.

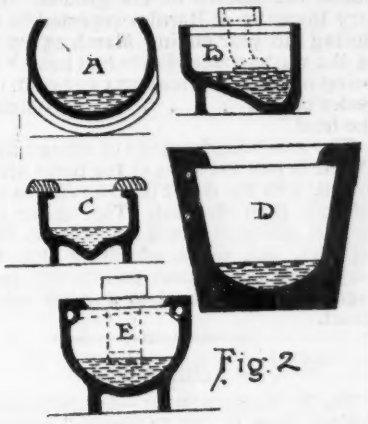

Fig. 2.

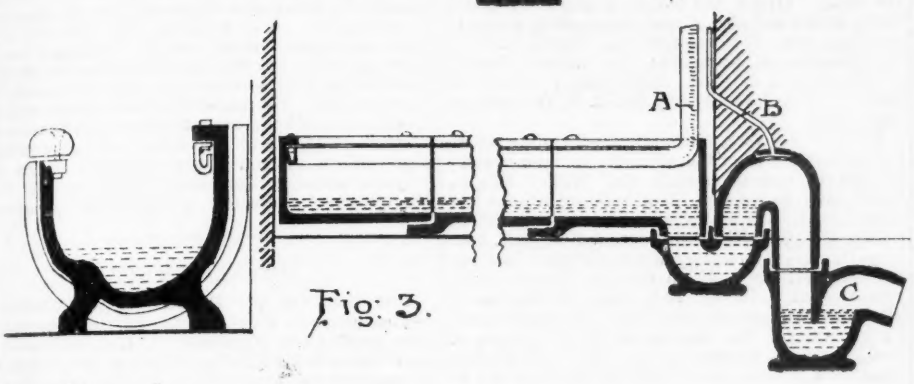

Fig. 3.

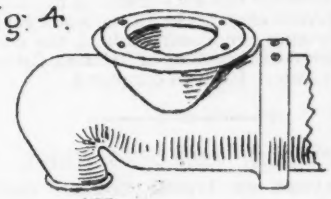

Fig. 4.

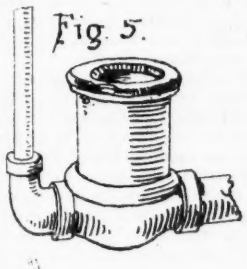

Fig. 5.

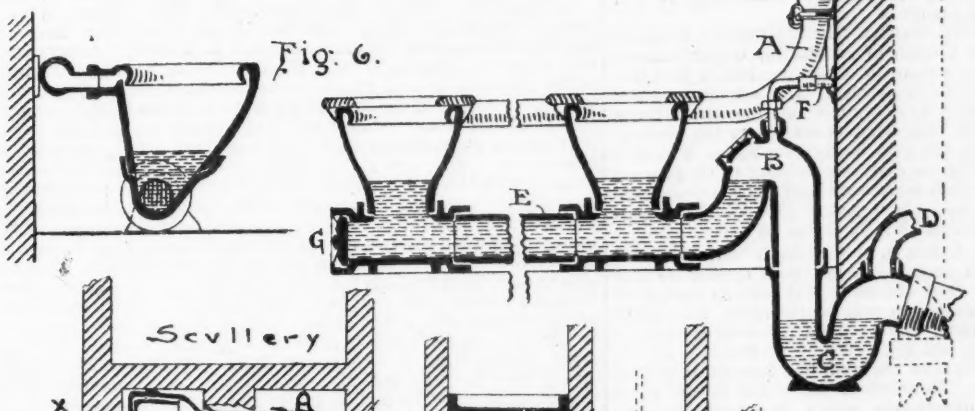

Fig. 6.

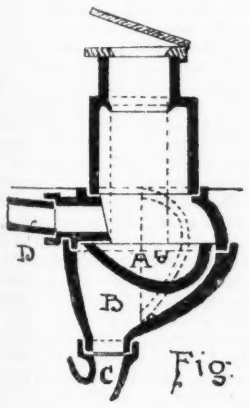

Fig. 7.

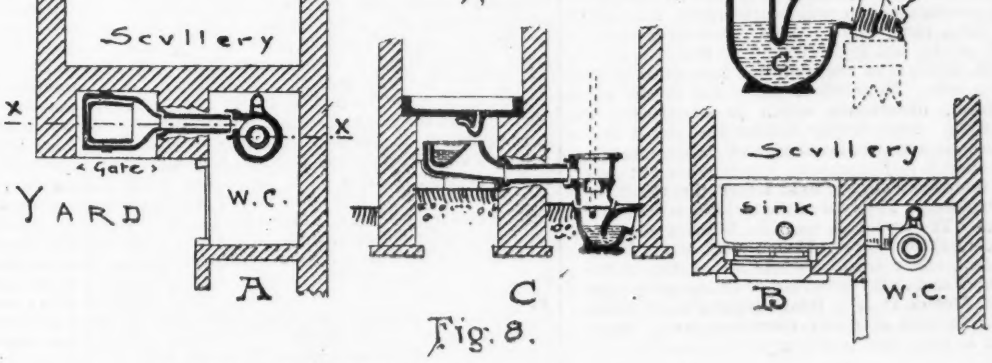

Fig. 8.

Illustrations to Student's Column.

siphonic type, and ought to be designed so that the action will be started by a drop-by-drop supply. In some cases the tank is filled by repeated discharges of a tipper, and when the tank is filled to the top of the siphon-pipe another discharge of the tipper starts the siphonic action; an additional supply-pipe controlled by a tap can be used to fill the tank more rapidly if required. Sometimes large tippers are used instead of siphon-tanks. These discharge the water with great velocity, and may be used for ordinary trough-closets, but do not give the after-flush required for recharging siphonic latrines.

Waste-water Closets.—Many water companies make an extra charge for ordinary water-closets, and as this charge was felt to be somewhat burdensome to the occupiers of small cottages, closets were designed for flushing with the waste water from sinks. The early closets of this kind were all objectionable on account of the great length of the tube (in some cases 4 ft. 6 in.) from the seat to the trap; this tube was soon fouled, and the closets became almost as evil-smelling as the pail-closets they were intended to supersede. Improvements of various kinds have, however, been effected in order to prevent or diminish this fouling, such as fixing the tube in a slightly-inclined position instead of exactly vertical, or making the lower portion of the tube of larger area than the pedestal, so that fouling would be confined to the latter, which, being nearer the seat, could be more easily cleaned from the top.

The essential part of all waste-water closets is the tipper for the reception of the waste water from the sink or yard gully. This tipper is swung on pivots, and is so designed that, when filled with water, it overbalances and discharges the water with considerable velocity, and, when empty, returns to its horizontal position. It is usually made of glazed fireclay, with a capacity of three gallons, rubber buffers being provided to prevent jarring and fracture. In some closets, as, for example, Day's "Stafford" closet (fig. 7), the tipper is placed directly below the seat, so that it receives the soil as well as the waste water. The tipper A is swung in the container B, which has a 6-in. outlet at the bottom, and fits into a trap C tapering from 6 in. to 4 in. The waste-water inlet is shown at D. Lengthening pipes are made for fixing between the top of the container and the pedestal in those places where the invert of the inlet is more than about 11 in. below the floor of the closet.

In courts and other places where two closets must be flushed from a single gully the first closet may be as in fig. 7, with the exception that a diminishing bend takes the place of the trap C. From this bend 4-in. drain-pipes are laid to the base-piece of the second closet, and the trap is fixed under this base. Plain tubes are carried up from the base to the pedestal. The water discharged by the tipper in the first closet passes, therefore, through the base of the second closet.

J. Duckett & Son's "Perfect" waste-water closet is a great improvement on the older types. The long tube between the trap and the pedestal is abolished by raising the tipper to a higher level. The general arrangement is shown to a small scale in fig. 8, A being the plan below the sink, B the plan above the sink, and C the section on the line XX. The pedestal has an annular channel containing water, and the inlet from the tipper-container is connected so as to give a whirlpool motion around the channel, thus effectually cleansing it. The small chamber containing the tipper is open to the yard on one side; a light wrought-iron gate is hung in the opening to protect the tipper from injury, while at the same time affording ready means of access. The brick-work around the chamber ought to be laid in good cement mortar and well grouted, and the sink to be well bedded in similar material, in order to prevent foul air passing through into the scullery. A ventilation-pipe is carried up from the trap of the closet. In a still more recent closet introduced by the same firm the basin is practically an ordinary wash-down basin with trap, but with a side inlet for the waste water instead of the usual flushing-rim.

Experiments in several towns have shown that houses provided with waste-water closets require less water than those provided with ordinary water-closets, and this is an advantage not to be overlooked when the water supply is limited. The sewage is also slightly less diluted, and this results in economy at the outfall works. Waste-water closets are also less liable to injury by frost, as the water used in flushing is warmer and as the trap is fixed

below the surface of the ground. The Sanitary Inspector of Burnley reported in 1895 that during the year ending March 25 6·5 per cent. of the waste-water closets had been "noted as being out of order, and 37·4 per cent. of clean-water closets . . . . mainly on account of the frost."

The great disadvantage of many waste-water closets is that the sides of the tubes are quickly fouled, with the result that the closets are more odorous than pleasant. The writer has used several different kinds in various blocks of cottages, but, while admitting that they are very much better than pail-closets, he cannot regard them as equal to a good wash-down closet.

OBITUARY.

MR. W. BASSETT-SMITH.—In addition to the particulars given in our "Obituary" column of last week, we may add that Mr. Bassett-Smith's work as a church architect was not confined to this country. He built several churches in Australia and the West Indies, his most prominent work in the colonies having been the remodelling of Trinidad Cathedral, the choir of which has been completed.

GENERAL BUILDING NEWS.

RESTORATION OF LITTLE BOWDEN CHURCH, MARKET HARBOROUGH.—It is proposed to restore Little Bowden Parish Church at a cost of about 2,200*l.* Mr. G. F. Bodley, A.R.A., of London, is the architect engaged, and the contractor is Mr. Halliday, of Stamford.

CHURCH, ST. MARTIN, UPPER KNOWLE, BRISTOL.—The new Church of St. Martin, Upper Knowle, the foundation-stone of which was laid in June last, has just been consecrated. The scheme provided for a building to accommodate 700 worshippers, but the work completed is limited to the chancel, vestries, &c., and two bays of the nave. The style is Early English, and the building is of pennant stone with Bath stone dressings. The portion completed will cost about 3,000*l.* Mr. W. V. Gough is the architect, and Mr. M. Durnford the contractor.

BAPTIST CHURCH, PRESTWICK, AYRSHIRE.—A new Baptist church has just been opened at New Prestwick. The church is 58 ft. 3 in. by 29 ft. 6 in. The accommodation will be for about 250; there are three exits, two to the front, and one at the back of the building entering by the side of the pulpit, which is of the platform type, with stair on either side. In front of the pulpit is the choir platform, underneath which is constructed the baptistry. Immediately behind the pulpit are a classroom, a vestry, lavatory, and heating-chamber. The church is heated with low-pressure hot water, and there is an electric light installation throughout the building. The cost of the building will be about 1,200*l.* The architect was Mr. William Kerr, and the contractors were:—Mason work, Mr. A. Hunter, builder; joiner work, Messrs. M'Lauchlan & Son; plumber and slater work, Mr. A. Dalrymple; plaster work, Messrs. D. & T. Bone; painter work, Messrs. J. B. Bennett & Sons; electric lighting, Messrs. Reid & Co.; and upholstery, Mr. Lauchlan Morrison.

RESTORATION OF THE PARISH CHURCH, MACCLESFIELD.—The parish church of Macclesfield, which has been restored at a cost of 21,000*l.*, was re-opened on the 24th ult. The old church was first built in 1278. It was rebuilt in 1740, but about fifteen years ago it had become so dilapidated that the people of Macclesfield determined to restore the building. The late Sir Arthur Blomfield prepared plans for the restoration. The chancel was first dealt with, and then the work stopped for a time for lack of funds. In 1898 there was a revival of interest in the project, and a movement was begun which has ended in the complete restoration of the church. The nave and tower have been entirely rebuilt. The Savage and Legh Chapels have been restored, but the ancient monuments are untouched.

KELVIN GROVE SCHOOL, GATESHEAD.—The Gateshead School Board are about to commence Kelvin Grove School from the design of Mr. J. Landell Nicholson, architect, Newcastle-on-Tyne, which design was placed first in competition last year, and which has been delayed through the bricklayers' strike settled recently. This, the first block of the two in the complete scheme, gives accommodation for 400 infants on the ground floor and 360 junior boys and girls on the first floor, at a cost of about 7,000*l.*

CONGREGATIONAL LECTURE HALL, WOKING.—Last October memorial stones were laid at Woking of a Congregational lecture hall, with infants' schoolroom, church kitchen, and necessary offices. The building has just been opened in York-road. Designed by Mr. W. Howard Seth-Smith, and built by Messrs. J. Harris & Son, the lecture hall, which will be used as a temporary church, accommodates 250 people, and is constructed of red brick, with tiled roof, and extenal woodwork of teak. Provision is made for the addition of classrooms when the necessity arises. The building is electrically lighted, and is heated by hot-water pipes, ventilation being secured by a silent electric exhaust fan in the roof.

PUBLIC HALL, MANSFIELD, NOTTINGHAMSHIRE.—A new hall, the Victoria Hall, has been erected at Mansfield. It occupies a position at the top of Leeming-street, on the site of the old courthouse and the old-established inn known as the Bowl-in-Hand. The building is of red brick, relieved by stone dressings. The chief hall measures 78 ft. by 39 ft. and 28 ft. high, providing accommodation, with balcony, for upwards of 800 people. It is lighted by six semi-circular windows on the north side, and a seventh in the gable and overlooking Leeming-street. A stage, fitted with appliances for theatrical performances and provision for an orchestra, occupies one end of the room, whilst four dressing-rooms or retiring-rooms are placed at the rear. Under the hall is a supper or dining room, which will also be used for smoking concerts, meetings, &c. The architects are Messrs. Vallance & Westwick, of Mansfield; the builders Messrs. J. Hutchinson & Sons, Nottingham; whilst the decorating has been done by Mr. C. E. Greenwood, Mansfield.

SUNDAY SCHOOLS, GRANTHAM.—The foundation-stones were laid on the 18th ult. of new Sunday schools in connexion with the Wesley Chapel, Spittlegate, Grantham. The building adjoins the chapel, and, with a caretaker's house, involves an outlay of 2,330*l.* The main room will be 59 ft. 6 in. by 39 ft. 6 in., with seating accommodation for some 400 children. In addition there will be six class-rooms, each 11 ft. by 10 ft., and at the rear a kitchen and the usual out offices. The heating will be by water. The contractor is Mr. Corah, of Loughborough, the stonemason Mr. G. H. Linnell, Grantham, and the plans were prepared by Mr. G. Camplin, of Grantham.

CONVALESCENT HOME, SHEFFIELD.—The Woofindin Convalescent Home, Whiteley Wood, Sheffield, is now complete. Messrs. Hemsoll & Paterson were the architects. Mr. Woofindin's estate, which amounted to over 134,000*l.*, was, after certain private bequests, left for charitable purposes. Two-thirds of his residuary estate were to be devoted to providing a convalescent home and one-third for almshouses. The latter, in Ecclesall-road, are already occupied, and in a few weeks the home will be ready for patients. Accommodation has been provided for about forty. Additional room has also been provided for patients who might care to avail themselves of the benefits of the institution and are able to contribute towards the cost of their support. Between twenty and thirty convalescents can be admitted under the latter scheme. The institution, which has a southern aspect, stands in 16¾ acres of land. The building is two stories high. On the ground floor is the dining-hall, which, together with the principal entrance-hall, occupies the centre of the front. To the east and west of the central portion are respectively the women's and men's wings. The women's wing contains reading and writing rooms, and a parlour lighted by a large bay window, as well as the office and the matron's sitting-room. On the men's side there is also a reading and writing room, and a billiard and smoking room. On the first floor are the bedrooms, those for men being, as in the case of the day-rooms, in the west wing, and for women in the east. In these the cubicle system has been adopted, the space being divided by means of wood partitions into rooms for two or three beds. The windows of the cubicles on the south front are treated as French casements. The central portion over the dining and entrance-hall is divided into two parts—that to the front being sub-divided into cubicles, and so planned that it can be used as an alternative ward for either wing, so as to provide for the fluctuation of the relative number of patients of each sex; that to the back being sub-divided into cubicles, baths, &c., for servants. At the end of each wing there is an emergency door and an outside escape staircase in case of fire. The building is lighted by electricity.

WESLEYAN CHURCH, PLATT BRIDGE, WIGAN.—A new Wesleyan church is being erected at Platt Bridge from the designs of Mr. J. Wills, architect, of Derby.

BUSINESS PREMISES, BRISTOL.—New premises have been erected in Wine-street and Union-street, Bristol, for Mr. J. Chambers. The artificial light throughout the building is electricity (installed by Messrs. Buchanan & Curwen, under the supervision of Herbert Thomas Sully, A.I.E.E., electrical engineer). The contractor for the building was Mr. R. F. Ridd. The carving was executed by Mr. W. Smith, of Montpelier. Messrs. Foster & Wood were the architects of the building.

SANITARY AND ENGINEERING NEWS.

LIVERPOOL WATER WORKS.—At a recent meeting of the Liverpool City Council, Alderman Burgess (chairman of the Water Committee) moved that the salary of Mr. Joseph Parry, the water engineer, be advanced from 1,200*l.* to 1,400*l.* In reply to Alderman Salvidge, who asked for the reasons, he added that Mr. Parry had been in the service of the Corporation for nearly forty years. The water revenue had increased by 34,702*l.* since 1895, while the expenses had been decreased by 1,511*l.* The population supplied with water outside the city alone was 330,000, the revenue for that area, which was yearly increasing, being about 12,000*l.* per annum. Then there were some important new works in course of construction, including at Prescot the largest service reservoir of the Corporation, while a second pipe line from Vyrnwy and a water supply to Wallasey were in contemplation. The recommendation was adopted.

LLANDUDNO WATER AND GAS SUPPLIES.—An inquiry on behalf of the Local Government Board was held on the 24th ult. at the office of the Urban District Council, Llandudno, by Mr. A. A. G. Malet, Inspector of the Board, with reference to applications by the Council for leave to borrow 4,700*l.* for gasworks purposes, and 16,301*l.* for works of water supply. Mr. E. P. Stephenson, engineer, stated that Llandudno derived its water supply from Dulyn Lake, some eight miles from the town, and from the lake to Llandudno there was a main line 9 in. in diameter. It was found that this did not give a sufficient flow, and an additional main, 15 in. in diameter, was laid from Caerhun, at the foot of the hills in which the lake is situated, to Croesan Hill. The application now was for money to extend that 15-in. main to Llandudno Junction, a distance of 3½ miles. The 15-in. had also been laid along Mostyn-street. The estimated outlay of 16,301*l.* included that already incurred on the Mostyn-street extension. There was no opposition

MISCELLANEOUS.

PROFESSIONAL AND BUSINESS ANNOUNCEMENTS.—The Sanitary Paint Company have removed to new premises in Rimrose-road, Liverpool.——Mr. E. Kilburn Scott, A.M.Inst.C.E., has taken the post of engineer and manager, for the United Kingdom, Colonies, and Egypt, to the International Electric Company of Liege; the London offices being at Clun House, Surrey-street, Strand.

ARBITRATION CASE.—At the Surveyors' Institution, Westminster, on the 23rd ult., Mr. Daniel Watney sat as sole arbitrator to assess the compensation to be paid to the Rev. Septimus Streeton for a small portion of land in Gipsy-lane which the London School Board had taken for the extension of their school there. From the opening statement of counsel it appeared that in May, 1883, the claimant succeeded to a moiety of a piece of land in Gipsy-lane, with a frontage of 16 ft. and a depth of 235 ft., which was copyhold of the manor of Lambeth. According to the custom of the manor, any copyhold land sold to a purchaser who is not a tenant of the manor is subject to a fine to the lord of the manor equal to twice the annual value of the land, whilst a copyholder escapes the fine. The claimant took advantage of this, and sold small and undivided shares of his copyhold to enable the purchasers of any copyhold land to become copyholders of the manor and so escape the fines leviable on their purchases. In this way claimant sold one-third of his moiety in July, 1883, for 25*l.*; another third in October, 1883, for 50*l.*; and then he sub-divided the remaining third into three portions, one of which he sold in 1884 for 50*l.* and another in 1889 for 75*l.* The other portion, one-eighteenth of the whole plot, claimant still held when the School Board served him with notice in 1894; and he claimed for 150*l.*, which he estimated he could have secured by selling it in the way he had disposed of the remainder of his moiety. Mr. F. Parish, solicitor, and Mr. W. E. Parish, surveyor, proved the facts as stated by the learned counsel. The latter valued the land at 9*l.*, on a basis of 10*l.* per foot frontage, but he considered 150*l.* could have been secured by dividing it. On the part of the School Board Mr. Howard Martin, surveyor, estimated the value of the whole land, at 6*l.* per foot frontage, at 96*l.*, the claimant's share being 4*l.* 5*s.* In his opinion 5*l.* would be a liberal compensation. Mr. G. A. Wilkinson, surveyor, corroborated this view. Counsel having addressed the arbitrator, Mr. Watney reserved his award.

DEMOLITION OF HISTORIC HOUSES AT WINDSOR.—The Corporation of Windsor have begun the demolition of seven historic houses which were good examples of the architecture of the reign of Charles I. The houses adjoin the present vicarage of Windsor, which formerly was a residence attached to Windsor Castle. They also adjoin a large piece of waste Crown land which was offered to the Corporation some time ago. Upon this and the site rendered vacant by the demolition of the houses, it was proposed to erect a Volunteer drill hall, as a memorial to the late Prince Christian Victor, but the project fell through owing to lack of support. The Corporation having condemned the houses—their own property—as unfit for human habitation, their destruction is being proceeded with.

THE HOUSING QUESTION IN BIRMINGHAM.—The Housing Committee held another meeting on the 22nd ult., under the presidency of Alderman Cook, but though they had four schemes for a block of flats in Potter-street before them, they came to no definite decision. However, the members of the committee present favoured one of the schemes presented, and this scheme, amended in accordance with certain alterations which were made, will be again brought up at a special meeting of the committee, when it is expected that it will be approved for recommendation to the Council. This scheme provides for a four-story block containing between sixty and seventy tenements. At the meeting of the

committee a deputation from the Birmingham Architectural Association was introduced on the question of throwing open to general competition the designs and plans for the dwellings which the committee purpose erecting. It was, however, pointed out by the chairman that with regard to the Potter-street and Bordesley Green schemes the arrangements had progressed too far for the proposal to be entertained, but the deputation were informed that their suggestion would be considered with regard to any other house building scheme which the committee might formulate.

SCOTTISH BUILDING TRADES FEDERATION.—The half-yearly meeting of the Scottish Building Trades Federation was held in Dundee on the 25th ult., when representatives attended from all parts of the country—Mr. A. Beveridge, builder, Perth, President, in the chair. The Secretary, Mr. J. L. Selkirk, C.A., Glasgow, submitted the report of the work of the Federation for the past half-year, which spoke of the earnestness and hopefulness with which it had been carried on, and of the advantages which could alone be secured by hearty combination among the various branches of the building trades. It urged the importance of visitation by the Executive of the various branch Associations throughout the country. Reference was also made to the recently-appointed Consulting Committee, which consisted of four representatives from each of the four principal cities, whose duty it was to consider all questions affecting wages, working agreements, &c., with a view, when necessary, to united action. The Committee had already made a most encouraging commencement. Special reference was made to the steps which had been taken to secure the adoption of such conditions of contract as might be mutually arranged with the Institute of Architects, with a view to meeting, if possible, certain difficulties and grievances which tradesmen allege they had under the existing system of carrying out contracts, more especially in reference to the delay in obtaining measurement of their work. It was agreed that a deputation should seek an early opportunity of meeting representatives of that body with a view to a conference on the subject. The National Association of Master Builders of Great Britain and Ireland having decided to hold their next annual meeting in Glasgow in the beginning of July—the Exhibition being the chief attraction—it was resolved to extend to them a most cordial welcome on the occasion, in which, it was confidently anticipated, the members of the various branches of the building trade would cordially join.

WEST DEREHAM CHURCH.—The roof of the nave of the ancient Church of St. Andrew, West Dereham, recently collapsed and fell in. Although it has been apparent for some time that the timbers were giving way, it was not considered that the catastrophe was so imminent. The church is an ancient fabric, chiefly in the Perpendicular style. The chancel was restored in 1895, and still remains intact.

WIDTH OF LEEDS STREETS.—At a meeting of the Improvements Committee of the Leeds Corporation on the 25th ult., a new series of by-laws with reference to the construction of streets were discussed and adopted. These proposals have been for some three years under consideration, and now that they have been finally shaped it only remains for them to be sanctioned by the City Council and the Local Government Board. They are intended to have the effect of improving the character of ordinary dwelling-houses, besides widening the streets. In future no street is to be less than 42 ft. in width, but provision is made allowing streets to be made 36 ft. wide with a forecourt (or garden) in front of the houses on each side of 6 ft. in width, and at intervals of not more than 150 yards there must be a street not less than 42 ft. in width. The existing by-law provided simply for a 36-ft. street. At the meeting a deputation attended from the Leeds and Yorkshire Architectural Society consisting of Mr. T. Butler Wilson, President, and Mr. H. Chorley, secretary.—*Leeds Mercury.*

THE MONUMENTAL BRASS SOCIETY.—The sixteenth annual meeting of this Society was held on Thursday, the 25th ult., at 32, Sackville-street, London, the Rev. R. W. M. Lewis in the chair. The Society still continues to carry out its original object, viz., the study, cataloguing, and preservation of these very interesting memorials of the dead. At present a series of articles by Mr. Mill Stephenson, F.S.A., on "The Palimpsest Brasses of England," is being continued in the *Transaction*, copies of which and particulars of membership can be had from Mr. F. W. Short, 51, Mornington-road, Leytonstone, Essex. It might be interesting to mention that Part XXVII., comprises the Counties of Essex-Herts, and it contains over a score of illustrations.

APPOINTMENTS.—The Local Government Board have sanctioned the appointments of the following sanitary officers, viz.:—Mr. E. G. Annis, medical officer, Greenwich; Mr. G. Millson, medical officer, Southwark; Messrs. H. Neighbour and S. Addison, sanitary inspectors in Hammersmith; Mr. J. H. Danson, sanitary inspector in Deptford; Mr. W. Barnes, sanitary inspector in Woolwich.

REGISTRATION OF PLUMBERS.—A meeting of representatives of district councils for the national registration of plumbers was held at the Guildhall on Wednesday, the 24th ult. Belfast, Birmingham, Bradford, Cardiff, Edinburgh, Glasgow, Leeds, Manchester, Nottingham, and Plymouth sent delegates, and reports were presented showing that since the Conference of Health and Water Authorities and Plumbers was held in Birmingham in October last 2,082 operative plumbers and 494 master plumbers had been registered, and that the applications for registration were so numerous that a vast number still remained to be dealt with. On the motion of Dr. Williams, Medical Officer of Health, Plymouth, it was decided to increase the facilities for the examination of applicants. Various arrangements for securing the more systematic training of plumbers were discussed, and on the motion of Dr. Alfred Hill, Medical Officer of Health, Birmingham, it was resolved that apprenticeship should be encouraged in connexion with the national registration of plumbers, and that a special form of indenture for plumbers' apprentices framed by the Plumbers' Apprenticeship Board of London should be circulated for adoption throughout the kingdom. Mr. Marchbank, Edinburgh, undertook to adapt the form to the requirements of Scotch law.

REGISTRATION OF TITLE TO LAND.—At a general meeting of the Incorporated Law Society held on Friday, the 26th ult., Mr. J. S. Rubinstein moved a resolution to the effect that, in view of the fact that the experimental period of three years mentioned in the Land Transfer Act, 1897, would expire in July, an inquiry into the system of compulsory registration of title in London should be held, in order to ascertain whether or not additional difficulty, expense, and delay are occasioned thereby without corresponding advantage to persons dealing with land. The resolution, after full discussion, was carried unanimously.

WINDOW, TIMBERSCOMBE CHURCH.—In the parish church of Timberscombe, in the heart of Exmoor, a stained glass window has been erected in memory of the late vicar. The subject of the window is the Annunciation. It was designed and executed by Messrs. Fred Drake & Sons, of Exeter.

CAPITAL AND LABOUR.

BUILDING TRADE DISPUTE IN LEICESTER.—About sixty bricklayers and builders' labourers have ceased work at the new wholesale market, in Halford-street, in consequence of a dispute as to the introduction of navvies to mix concrete. The builders' labourers, who receive 6½d. per hour, claim that the work in question is work of a character which, under Sir William Markby's award, should be done by them, and not by navvies, who are, it is alleged, paid at a less rate per hour. The Employers' Federation claim that the work is essentially work for navvies, and that the bricklayers' labourers are violating the rules mutually agreed upon by their society and the federation in insisting on the discharge of the navvies. The federation contend that things should be continued now as they were, pending arbitration, but the bricklayers' labourers demand that these navvies should be discharged before arbitration is entered upon.

HARTLEPOOL BUILDING TRADE.—A complete stoppage of the building trade in the Hartlepools has just taken place, owing to a strike of bricklayers and plasterers' labourers, who met the proposal of the masters for a decrease of 1d. per hour by making a demand for a ½d. per hour increase in wages. Several hundred men are affected.

THE BRADFORD BUILDING TRADE.—For some time past the conditions of labour in the Bradford building trades have been under active consideration by both employers and employed. There appears at present to be but little hope of an amicable settlement. The history of the present crisis is briefly as follows:—Six months ago, in consequence of slackness of trade, the master builders gave notice to the men of three alterations of existing conditions; stipulating (1) for a reduction in wages of 1d. per hour; (2) that society and non-society men should be allowed to work peaceably together; and (3) that notice of alteration of rules should expire either on May 1 or November 1, instead of between April 1 and July 1, as at present. The present wages are 9½d. for masons and bricklayers and 9d. for joiners, and the joiners replied to the masters' action by giving notice ten days later of a demand for the increase of their wages by 1d. per hour. In the course of the past few days some attempts have been made to arrive at a settlement. The joiners met the masters about a fortnight ago with no result, and nothing further was arrived at until the 29th ult. The operative masons met their employers on Saturday night, and were offered 9d. per hour—a reduction of ½d. in place of 1d. The condition as to society and non-society men working together was adhered to, but the demand for alteration as to the expiry of notice was waived. The masters, moreover, offered to put all questions at dispute to arbitration. These new terms were considered by the men at a meeting at Barry's Hall, and they decided with practical unanimity to abide by the existing conditions, and refused the proffered arbitration. A meeting of the Bradford Master Builders' Association was also held at the Stone Exchange, Chapel-lane, Mr. Phineas Drake, presiding. The masons' decision was conveyed to the meeting and discussed, and ultimately it was decided that the following notice should be issued and placarded in all the workshops:—"Bradford Master Builders' Association. Notice.—On and after May 1 the rate of wages will be as follows:—Masons 9d. per hour, joiners 8½d. per hour. Rules.—Society and non-society men to work together. Six months' notice of alteration of rules to be given on either side, to expire on April 30 or October 30." The present situation, therefore, is that the men of both branches of the trade are offered a reduction of ½d. per hour, and that the masters' original claims in the other two respects are maintained. It is understood that the masters viewed with surprise the operatives' refusal of arbitration, but that the offer of arbitration is not withdrawn so far as the masons are concerned. It is also understood that the men are less disposed to accept the other conditions than they are to submit to a reduction of wages. The masters explained that as the state of trade had caused them to give notice of a reduction in the wages of masons and joiners, they could not see their way to grant the advance asked for.—*Bradford Observer.*

BRADFORD JOINERS.—Since the Bradford branch of the Amalgamated Society of Joiners received notice of a reduction they have started a workshop of their own.

BRICKMAKERS' STRIKE, EDMONTON.—The strike of brickmakers which has been in progress for some weeks at Edmonton has ended. The dispute arose on the masters wishing to reduce the rates of pay. The masters have now given way, and the brickmakers return to work on the same wages as last year.

LEGAL.

THE NEW STREET FROM HOLBORN TO THE STRAND.

THE case of the London County Council *v.* the Metropolitan Electric Supply Company, Limited, was concluded on the 25th ult. before Mr. Justice Farwell in the Chancery Division. The case raised a question of interpretation of a section of the London County Council (Improvement) Act, 1899.

It appeared that under the Metropolitan Electric Supply Company Mid-London Lighting Order, 1889, confirmed by the Electric Lighting Orders Confirmation (No. 5) Act, 1899, the defendant company had power to supply electrical energy within the district which includes the whole of the area which might be taken by the County Council under the powers of the London County Council (Improvements) Act, 1899, for the intended new street from Holborn to the Strand. When this Act was passed the defendants had a station, buildings, machinery, and works for the purpose of electric lighting on a site partly freehold and partly leasehold in Sardinia-street, the whole of which was required to be taken by the County Council for the purposes of their proposed improvements. A statutory bargain was arrived at between the plaintiffs and the defendant company, which was embodied in Section 55 of the Improvements Act which provided shortly that (1) the Council should not enter upon or take any part of the existing site of the defendants' station until after the expiration of two years after they had provided at their own expense and vested in the defendants a site available for the erection of a generating station, and (2) that the Council should acquire the freehold and all other interests in the new site and should convey to the Company the freehold of so much of the new site as should be equal in area to the freehold portion of the existing site free of expense to the Company, and should also grant to the Company free of expense a lease of the remaining portion of the new site upon terms equivalent to those of the lease under which the Company held the leasehold portion of their existing site; (3) that it should be lawful for the Company on the site so provided to erect, maintain, and work a station for generating, transforming, and transmitting electrical energy. The important question arose under Sub-Section 7, which provided; "The Council shall, on or before the date of the conveyance and lease of the new site, pay or secure, to the satisfaction of the Company, a sum equal to the costs and expenses of erecting and fitting up a new generating station upon the new site with new plant of a capacity to generate and supply electrical energy to an output of not less than 4,000 kilowatts, and all expenses incurred in and in connexion with taking up and replacing, relaying and altering mains and lines owing to the carrying out of the provisions of this Act." A dispute arose as to the interpretation of this sub-section, and the plaintiffs sought a declaration that, according to the true construction of the section, they were only bound to pay or secure to the satisfaction of the Company a sum equal to the costs and expenses of erecting and fitting up a new generating station upon the new site with new plant of a capacity to generate and supply electrical energy to an output of not less than 4,000 kilowatts, and were not bound to pay or secure any sum equal to the costs and expenses of erecting and fitting up a generating station with new plant of a capacity to generate and supply electrical energy to an output of 5,000 kilowatts or any number more than 4,000 kilowatts, on the ground that under unusual circumstances a more powerful plant might be required to generate and supply 4,000 kilowatts or

on any other ground whatever. The defendants contended that the sum claimed by them was based on the station and plant being of a capacity to generate and supply such output as a matter of practical commercial working, and that it was impossible for them to generate and supply an output of not less than a fixed amount without having, in addition to the *minimum* plant capable of generating or supplying such an amount temporarily, spare for extra plant in case of a breakdown or repairs, &c.

Mr. Justice Farwell, having heard expert evidence, held that the plaintiffs were right in their contention, and granted a declaration to that effect. He also awarded them the costs of the action.

Mr. Haldane, K.C., Mr. C. E. Jenkens, K.C., and Mr. Methold appeared for the plaintiffs, and Mr. Balfour Browne, K.C., Mr. Cripps, K.C., Mr. Butcher, K.C., and Mr. Sargent for the defendant company.

CASES UNDER THE LONDON BUILDING ACT, 1894:

DICKSEE *v.* HOSKINS.

THE case of Dicksee *v.* Hoskins came before a Divisional Court of King's Bench on the 25th ult., on the appeal of the District Surveyor from the decision of a Metropolitan Police Magistrate allowing an appeal under the London Building Act, 1894, from a notice of objection to a proposed building served by the appellant upon the respondent, a builder. The question to be decided was whether the proposed building came within Section 74 (2) of the Act of 1894. Sub-Section 2 of the section runs as follows:—"In every building exceeding ten squares in area used in part for purposes of trade or manufacture and in part as a dwelling-house, the part used for purposes of trade or manufacture shall be separated from the part used as a dwelling-house by walls and floors constructed of fire-resisting materials, and all passages, staircases, and other means of approach to the parts used as a dwelling-house shall be constructed throughout of fire-resisting materials." The building in question was No. 87, Old Kent-road, and was the re-erection of an old beerhouse called the Horseshoe. It was when erected to exceed ten squares in area, and was intended to contain in the basement beer and wine cellars; on the ground floor a bar, public lobby, saloon-bar, private-bar, parlour, and a public-room; on the first floor a sitting-room, three bedrooms, and a kitchen; and on the top floor attics. The old house was, and the new when created was to be, used for the sale of wine and beer to be consumed on and off the premises. The trade was to be carried on in the basement and ground floor, and the licensee and his family were to reside in the upper floors of the building, and the whole of the building was to be covered by the Justices' certificate and Excise licence. The floors separating the ground floor from the first floor and the staircase leading to the first floor were not intended to be constructed of fire-resisting materials, and the magistrate found that if Sub-Section 2 of Section 74 of the Act applied to the building, the provisions of that section would be contravened. He also found, as a fact, that the basement and ground floor of the building were intended to be used for the purposes of the trade of the beerhouse, and that the part above the ground floor was intended to be used as a dwelling-house for the licensed occupier, but held that the case was governed by the decision in "Carritt *v.* Godson," and allowed the appeal, overruling the objection of the District Surveyor. Hence the present appeal of the District Surveyor.

At the conclusion of the arguments of Counsel, the Lord Chief Justice held that the section was intended to apply to buildings part of which were used for trade and manufacture and the other part as a dwelling, and that it was not intended to apply to a building certain rooms of which were used as a dwelling. He thought, therefore, that the appeal should be dismissed.

Mr. Justice Lawrance concurred, and the appeal was accordingly dismissed.

Mr. Horace Avory, K.C., and Mr. Rowsell appeared for the appellant; and Mr. Danckwerts, K.C., and Mr. Craice for the respondent.

CROW *v.* WHITECHAPEL BOARD OF WORKS.

IN a specially constituted Court of King's Bench composed of Justices Grantham, Kennedy, and Darling, the hearing was resumed on Saturday, the 27th ult., of the case of Crow *v.* the Board of Works for the District of Whitechapel. The case was argued before Mr. Justice Kennedy and Mr. Justice Darling last December, but their lordships then disagreed, and the case now came on for a rehearing before an additional Judge, Mr. Justice Grantham.

This was the defendants' appeal from a decision of Mr. Dickinson, the magistrate sitting at the Thames Police-court in June last. It appeared that a summons was taken out by Mr. Crow, the District Surveyor, against the defendants for not having given him notice under Section 145 of the London Building Act, 1894, before commencing the construction of a number of boxes or inspection chambers under the streets in the district for the purpose of electric lighting. The defendants were the local authority within the meaning of the Electric Lighting Acts, 1882 and 1888, for the district, and in the year 1892 were granted by the Board of Trade, pursuant to the Electric Lighting Acts, 1882 and 1888, in respect of such district a provisional order called the Whitechapel District Electric Supply Order, 1892, which was afterwards confirmed and came into force on June 27, 1892. By Sections 11 and 12 of this order, the "undertakers" were authorised to construct in any street any such boxes as might be necessary for purposes in connexion with the supply of electric energy, including apparatus for the proper ventilation of such boxes. The sections further provided that "every such box shall be for the exclusive use of the undertakers and under their sole control, except so far as the Board of Trade may otherwise order, and shall be used by the undertakers only for the purpose of leading off service lines and other distributing conductors, or for examining, testing, regulating, measuring, directing, or controlling the supply and energy, or for examining or testing the condition of the mains or other portions of the works, or for other like purposes connected with the undertaking, and the undertakers may place therein motor switches and other suitable and proper apparatus for any of the above purposes. Every such box, including the upper surface or covering thereof, shall be constructed of such materials, and shall be constructed and maintained by the undertakers in such manner as not to be a source of danger whether by reason of inequality of surface or otherwise." Section 12 further provided that the undertakers should one month before the commencement of such works, serve a notice upon the Postmaster-General describing the proposed works, together with a plan of the proposed works, and, in addition, a like notice and plan upon the County Council. The defendants did not, before commencing the construction of the boxes, serve Mr. Crow with notice of the intended work, under Section 145 of the London Building Act, 1894. Mr. Crow's contention was that the boxes came within the definition of "building structure or work" in Section 145, and that the defendants were bound before commencing the work to serve upon him as the District Surveyor a "building notice" as prescribed by the section. The defendants contended that the Act of 1894 did not apply at all to boxes constructed in the streets under the Provisional Order, inasmuch as the order contained a complete code regulating the materials, situation, and mode of construction of such boxes, and provided a complete machinery for enforcing such regulations, and with which special code and machinery the London Building Act of 1894 was inconsistent. The magistrate found as a fact that the boxes so constructed were "building structures or works" within the meaning of Section 145 of the London Building Act, 1894, and having regard to Sections 72, 201, and 203 of the said Act, he held that the provisions of Section 145 were not inconsistent with the special Act and imposed on the defendants the nominal penalty of 1*s.* and ordered them to pay 10*l.* 10*s.* costs. Hence the present appeal of the defendants.

Mr. Dickens, K.C., and Mr. Talbot appeared for the appellants (defendants); and Mr. Horace Avory, K.C., for the respondent (plaintiff).

At the conclusion of the arguments their lordships reserved judgment.

EMPLOYERS' LIABILITY ACT.

HOW SHOULD A CEILING SCAFFOLD BE FORMED?

AT Marylebone County Court on Monday, before Judge Stonor and a jury, Thomas Davies, a plasterer, Kensal Green, N.W., sought to recover damages, under the Employers' Liability Act, from Mr. David Henry Nash, builder, &c., Paddington, W., the claim being in respect of personal injuries sustained by the plaintiff owing, it was alleged, to a defect in the plant provided by the defendant, and negligence for which he was responsible.

Mr. H. Morris, counsel, appeared for the plaintiff, and Mr. E. Mellor, counsel, defended.

The plaintiff stated that on October 19 last he was in the employ of the defendant, doing plastering work at some new houses in Harvist-road, N.W. A scaffold, or platform, about 5 ft. high, had been erected in one of the rooms to enable the plasterers to put up the ceiling. This scaffold extended over the whole room, with the exception of a small space at the doorway, where there was a hole through which the men could pass up to the scaffold or down, and by which the labourers sent up the "coarse stuff" and the plaster. While working upon this scaffolding, and looking up at the ceiling, he (the plaintiff) slipped down the hole near the door, dislocating his right shoulder and bruising some of his ribs. In consequence of the accident he was prevented from doing any work for thirteen or fourteen weeks, for which he claimed 2*l.* a week. He further claimed with respect to the pain and suffering.

Cross-examined: He had got upon the scaffold and down again by means of the hole near the doorway both on the day of the accident and the previous day. He had been a plasterer for many years, and considered that a hole in a scaffold, such as the one in question, was dangerous. A short board, he maintained, should have been used to cover the hole, the board being pushed aside when necessary.

No other witnesses were called for the plaintiff.

The defendant maintained that the scaffold in question was erected in the ordinary way, and that it was customary to leave a hole in the platform without covering it with a small board.

The Judge: It is not practicable to put a short plank across the hole?

The defendant: I have never seen a plank or board put across.

Mr. Ernest George Harvey, builder, said that the defendant was doing certain work upon the houses in question under a contract with himself (witness). He had inspected the scaffold, and found it erected in the only way that he had ever seen such scaffolds put up.

The Judge: What about the hole?

The witness: It is usual to leave a hole as described.

George Townsend, foreman to the last witness, said that the scaffold in question was a very good one. It was usual, so far as his experience went to show, to have a hole in the platform.

The Judge: The only question of importance in this case is whether the hole was necessary and proper, and the balance of evidence is to the effect that it was so.

The jury found that the scaffold was properly and safely erected, and that the hole was necessary and proper. This was a verdict in favour of the defendant, for whom his honour gave judgment.

The Judge: There can be little doubt that the man is entitled to claim under the Workmen's Compensation Act.

Mr. Morris: There seemed to be some doubt with regard to a certain point in connexion with that Act.

The Judge: I cannot see the slightest reason to doubt. I think I should not find that there was "gross negligence" on the part of the plaintiff.

It was understood that the plaintiff would bring another action under the Workmen's Compensation Act, joining Mr. Harvey as a respondent. The whole question of costs was reserved.

IMPORTANT ACTION BY CONTRACTORS.

IN the Court of Appeal, composed of the Master of the Rolls and Lords Justices Collins and Romer, on the 29th ult., judgment was delivered in the case of Leslie & Co., Limited, *v.* the Managers of the Metropolitan Asylums District on the appeal of the plaintiffs from the judgment of a Divisional Court of King's Bench, composed of Justices Bigham and Phillimore, on April 2, 1900, the question in issue arising upon a contract entered into between the plaintiffs and the defendants for the erection of a hospital for infectious fevers at Hither Green, Lewisham, the case coming before the Divisional Court by way of appeal by the defendants from the decision of an Official Referee. The case was reported fully in the issue of the *Builder* for April 7, 1900. A great part of the work in question had been let out to sub-contractors and experts called specialists, and the question for decision was as to who was to be responsible for alleged delay on the part of these sub-contractors. The contract was dated July 23, 1895, and it provided that the plaintiffs should execute "the works" shown on the plans, including the chimney stacks and heating apparatus. The work had to be completed in two years, and the price was to be 210,688*l.* The material clauses of the contract were these:—The managers (viz., the defendants) reserve to themselves the right to employ other parties to execute the works for which provisions are made, and to deduct the full provided amounts (*i.e.*, the prime cost plus 10 per cent. thereon) from the contract sum. In such cases the contractors (the plaintiffs) are to allow such parties every facility for the execution of their several works simultaneously with their own. The managers are to be at liberty to omit any provisional sums or quantities. The contractors are to pay the sub-contractors the amount provided in the contract for such purpose, or less or more as may be certified, and the payments thus made will be considered as work done by the contractors, and will be included in the certificate to the contractors next following such payment. No payment is to be made to such sub-contractors, except upon the architect's certificate. The contractor is to pay such amount as may be certified from time to time, within seven days from the date of the certificate, and should the contractor neglect, or refuse, to make such payment within the said period, the managers shall be at liberty to pay the amount direct to such sub-contractor, and to deduct from the contract sum the gross amount which the contractors have included in their estimate in respect of such work and his profit thereon, the amount so to be deducted not being less in any case than such amount so certified. The contractors are to attend with all building trades upon the sub-contractors, which is to include "cutting away from the same and making good after the same, and allowing the free use of such plant, tackle, and scaffolding as the contractors may be using for their

own purposes." The contract also provided that the contractors were to allow such persons full opportunity to carry on their works simultaneously with their own. The contract also provided for the retention by the defendants of 10,000*l.* as security for its due performance. Alterations and omissions from the specifications were to be allowed, and made only on the direction in writing of the architect. Among the works to be erected were twenty-nine chimney-stacks at the price of 137*l.* 10s. for each stack. The contract went on: "The contractor shall provide the sum of 137*l.* 10s. prime cost for each central stack of flues in large wards above the level of the ground floor." It then provided how they were to be constructed, and that they were to be finished complete by a specialist potter. It also provided that the contractors were to supply all necessary "scaffolding, plant, water, and hoisting." The plaintiffs then communicated with Messrs. Doulton, who agreed to do the necessary work. Part of the claim in the action arose from the alleged delay on the part of Messrs. Doulton to do the necessary work. Another claim arose from a sub-contractor for the supply of the necessary steam and hot-water apparatus. The clause relating to that provided that the hot-water supplies to baths, lavatories and sinks, except where otherwise specified, should be done by specialists; but the contractor was to attend on, and cut a way for, and make good after them. A sub-contract was made on February 2 between the plaintiffs and Messrs. Berry & Sons, by which the latter agreed to supply this apparatus for 11,900*l.*, and it was said that Messrs. Berry had been guilty of delay in executing this work. Owing to these alleged delays, the plaintiffs could not complete their works and get the architect's final certificate and payment accordingly. The plaintiffs therefore claimed damages on the footing that there was an obligation on the defendants to see that the work was done by the specialists and sub-contractors within a reasonable time. The case was referred to an Official Referee, when counsel for the defendants asked the learned Referee to non-suit the plaintiffs on the ground that Messrs. Doulton and Berry on the contract were the sub-contractors with the plaintiffs, and any delay lay against them and not with the defendants.

The learned Referee refused to non-suit, and from this decision the defendants appealed to the Divisional Court, which held that in the circumstances the plaintiffs were not entitled under the contract to recover the damages from the defendants. From this decision the plaintiffs now appealed.

Mr. R. M. Bray, K.C., and Mr. T. Ribton appeared for the appellants (plaintiffs), and Mr. English Harrison, K.C., and Mr. H. Smith for respondents (defendants).

The Master of the Rolls in giving judgment, having referred to the material clauses in the contract and to the facts, said that two instances as to what took place with regard to the specialists had been argued before them; one relating to Messrs. Doulton & Co.'s work and the other to Messrs. Berry & Co. for the hot-water arrangements. Having gone in detail through the matters relating to Messrs. Doulton & Co.'s work, in his lordship's opinion it would not be necessary to go in detail as to what took place with regard to Messrs. Berry & Co. Messrs. Doulton & Co. were behind in the erection of their work whereby the plaintiffs were hindered in getting on with the other work contracted for under their contract. How in these circumstances were the defendants liable for the delays of Doulton & Co.? The plaintiffs' case was that the defendants were liable to them for these delays. How so? The defendants never contracted with Messrs. Doulton & Co. The persons who contracted with Messrs. Doulton & Co. were the plaintiffs, and the plaintiffs alone. Messrs. Doulton & Co. were sub-contractors, and their work was work which the plaintiffs had contracted with the defendants to provide. The defendants never paid Messrs. Doulton & Co. one penny for their work, and were never under any liability to them. Messrs. Doulton & Co. were paid by the plaintiffs for their work, and his lordship thought that the Divisional Court were right in holding that the defendants were not liable to the plaintiffs for the delays of Messrs. Doulton & Co. If any one had a remedy against Messrs. Doulton & Co. for delay, it was the plaintiffs and not the defendants. It was next argued that if the plaintiffs could sue Messrs. Doulton & Co. for delay, they could only do so as trustees for the defendants, and if the plaintiffs recovered damages against Messrs. Doulton & Co. for delaying them, they would have to hand over the damages recovered to the defendants. His lordship did not agree with that contention. The truth was there was no trust at all. Messrs. Berry & Co. were also behindhand with their work, and what his lordship had said with regard to Messrs. Doulton & Co. applied to them. Their case was fully argued out and he had nothing to say more than this, that Messrs. Berry's case was, if anything, stronger than Messrs. Doulton & Co.'s case, because the order given in that case was more specific in detail than that given in Messrs. Doulton & Co.'s case. In his lordship's opinion the decision of the Divisional Court was right and the appeal must be dismissed.

Lords Justices Collins and Romer concurred, and the appeal was accordingly dismissed with costs.

WORKMEN'S COMPENSATION ACT.

WHAT IS AN "ACCIDENT"?

THE case, Perry *v.* Baker & Sons, reported in these columns last week, came again before Judge Stonor on Tuesday at Marylebone County Court.

The applicant, it may be recollected, was Richard Perry, a carpenter and joiner, 14, Napier-road, College-park, N.W., who brought an action under the Workmen's Compensation Act against Messrs. Baker & Sons, Hythe-road Works and High-road, Willesden Green, the claim being in respect of personal injuries said to have been sustained by the applicant whilst in the respondents' employ. On September 15 last the applicant was ordered by the respondents' foreman to make a large, heavy seat. While lifting this piece of work, to see a joint underneath, he strained a muscle in the side of his abdomen. The chief points in the defence were that the man was told not to attempt to lift the seat without assistance, and, as a point of law, that the man had not met with an accident within the meaning of the Act.

Mr. A. H. D. Nonweiler, solicitor, now appeared for the applicant, and Mr. Hohler, counsel, for the respondents.

Mr. Nonweiler reminded his Honour that the case had been adjourned after the question was raised as to whether there had been an accident within the meaning of the Act. He now wished to draw attention to the fact that the respondents, in their answers to interrogatories, stated that they had paid the applicant all the compensation to which he was entitled under the provisions of the Workmen's Compensation Act.

Mr. Hohler pointed out that in another portion of the answers to the interrogatories it was submitted that the applicant's injuries were not caused by an accident arising out of, and in the ordinary course of, his employment.

Mr. Nonweiler said it was evident that the respondents had admitted that the applicant was entitled to some compensation in respect of his injuries, and having paid the man compensation to January 22, 1901, it was useless for the learned counsel on the other side now to come before the Court and submit that there had been no accident.

The Judge remarked that the respondents, in their answers, distinctly denied that there had been an accident arising out of, or in the ordinary course of, the man's employment.

Mr. Nonweiler, quoting from Pitt-Lewis's "Yearly County Court Practice," pointed out that an accident was there so defined as "to include every phase of personal injuries, provided they involved some fortuitous and unexpected event."

The Judge remarked that in several cases recently decided it had been held that when something happened to a person, without an external cause to produce it, there was no accident. At least, such was the tendency of the decisions, but he could not say whether, after a few more appeals had been brought before the House of Lords, a proper and satisfactory interpretation of an accident might not be given.

Mr. Nonweiler quoted from the case Hamlyn *v.* The Crown Accident Insurance Company (1893, 1 Q.B., 750), where a man, in stretching to pick up a marble which had rolled on the floor, strained and hurt himself; it was held to have been an "accident." In the present case also he (Mr. Nonweiler) asked his Honour to say that there was an accident within the meaning of the Act.

The Judge: I should have no hesitation in saying that, from a common-sense point of view, there was an accident, but I should not be prepared to say that there was an accident within the meaning of the Act.

Mr. Hohler went on to submit that in the present case, although the man sustained "injuries," he did not meet with an "accident" within the meaning of the Act. The man's exertion in lifting the seat might have caused his injuries, but no one could say that there was an accident. Suppose, continued the learned counsel, a man running to catch a train fell, and, putting out his hand, injured it. That would be an accident. But if, on the other hand, the man fell, owing to the failure of his heart, there would be no "accident," although there might be an "injury."

The Judge: In the present case there is evidence of a muscle being strained or giving way, and I cannot see the difference between an instrument or tool breaking and a muscle giving way. There would appear to be an accident in each case.

Mr. Hohler submitted that while the breaking of an instrument might be looked upon as an accident, the breaking or straining of a muscle involved an "injury," and not an "accident."

The Judge: I must reserve my judgment.

ACTION BY AN ARCHITECT FOR FEES.

THE hearing of the case of Matcham *v.* The Northern Theatres Company, Limited, was concluded on the 29th ult. before Mr. Justice Mathew and a Special Jury in the King's Bench Division. It was an action by Mr. Frank Matcham, architect, against the defendants to recover 1,059*l.* 12s. for fees and charges for designing plans and obtaining tenders for the erection of a proposed new theatre at Huddersfield. The case for the defendants was that the charges were excessive and unreasonable, and further that plaintiff was employed as their architect for the construction of the theatre for a commission of 4 per cent. on the cost of the building, subject to the express condition that the cost of the theatre was not to exceed 15,000*l.* That the minimum cost of the theatre if built according to the plaintiff's plans would have been 28,000*l.*, and they therefore decided that the building should not be proceeded with, and that the work executed by the plaintiff was of no use to the defendants. In these circumstances the defendants pleaded that they were not bound to pay the plaintiff anything.

The plaintiff in his evidence stated that on May 3, 1889, he saw Mr. Robinson, one of the directors of the defendant company, with reference to the erection of the theatre, and then it was mentioned that the cost of the theatre was to be about 15,000*l.*, but plaintiff said he could express no opinion as to the cost until he saw the site. He was appointed architect, and was to be paid 5 per cent. on the lowest tender. A local architect was to act with him, and was to receive 1 per cent. out of his (plaintiff's) commission. He did all the necessary work and employed a quantity surveyor to get out the quantities. On January 17, 1900, the directors made up their minds not to proceed with the erection of the theatre. No suggestion was ever made up to the time that he was not to be paid if the cost of the theatre exceeded 15,000*l.* It was at first resolved that the theatre should be built of brick and terra-cotta, but the ground landlord objected to this and insisted on stone being used. This involved greater expense than had been foreseen.

Evidence was given that the plans and quantities were carefully prepared, and that the extras proposed to be added to the theatre involved an additional cost of 7,495*l.* When the work was not carried out the custom was that the architect should receive 2½ per cent. on the estimated cost of the building.

For the defence it was contended that the essential point of the plaintiff's employment was that the cost of the theatre was to be limited to 15,000*l.*, and that he was to prepare plans for a building to be constructed at that cost; that the plans which he had prepared were of no use to the defendants, for the theatre he designed would have cost 28,000*l.*

Evidence having been given in support of the defendants' case the jury in the result returned a verdict for the plaintiff for 325*l.*, and judgment was entered accordingly.

Mr. Crispe, K.C., and Mr. Spencer Bowen appeared as counsel for the plaintiff; and Mr. Lawson Walton, K.C., and Mr. Willes-Chitty for the defendants.

IMPORTANT BUILDING CASE.

THE case of *in re* an Arbitration between Ford & Co. and Bemrose & Sons, Limited, came before a Divisional Court of King's Bench, composed of Justices Kennedy and Phillimore, on the 1st. inst., in the form of a special case stated by Mr. Robert Vigers, the umpire, under a submission contained in a contract dated May 28, 1895, and made between Messrs. Bemrose & Sons, Limited, printers, of the one part, and Messrs. Ford & Co. of the other part. From the case stated it appeared that at some time prior to the date of the contract of May, 1895, Messrs. Bemrose instructed Mr. Ernest R. Ridgeway, an architect, of Long Eaton, to prepare on their behalf plans for the erection of certain works in Park-street, Canal-street, and Carrington-street, Derby, and to invite tenders for the execution of such works. Mr. Ridgeway prepared the plans and invited tenders upon such plans and certain conditions of contract and bill of quantities, and with such tender furnished a schedule of prices. Such schedule of prices was for the purpose of determining the amount to be paid or allowed in respect of any alterations or deviations from the original plans which might be determined upon during the progress of the works, and the prices in the schedule were the prices referred to in the contract as the prices upon which the contract was based. Messrs. Ford's tender was accepted, and the contract in question entered into between Messrs. Bemrose and Messrs. Ford. The contract followed and incorporated and formed one document with a copy of the conditions of contract upon which Messrs. Ford tendered. The material clauses of the contract provided that the work was to be executed in strict accordance with the requirements of the specifications and drawings to the satisfaction of Messrs. Bemrose or their architect. That "the drawings and specifications are to be considered as equally binding on the contractors who undertake the execution of the work, and if any part is omitted from the drawings and specifications which is usually noted or given or described in them, and which may be reasonably inferred from them as being necessary to properly carry out and complete the works, the same shall be equally binding on the contractors as if it had been specially shown or described. Any alteration of the works contracted for which may be decided upon during their progress must be carried out at prices on which the contract is based, and the value of the alteration or deviation from the original plans, after being so calculated by the contractors and the architect, shall be added to or deducted from the

amount of the contract as the case may be, but in no case with any alteration or deviation from the original plans and specifications be allowed to invalidate the contract." The contract provided that all disputes should be referred to arbitration under the Arbitration Act, 1889, and contained a covenant by Messrs. Ford that they would "do and perform the whole of the works required in accordance with the plans and specifications for the erection of the new works, and provide all labour, plant, and materials, &c., of whatsoever kind required, at and for the sum of 10,559*l.*" Messrs. Ford completed the work included in the contract, and on April 1, 1897, Mr. Ridgeway, by his final certificate, certified that there was a balance owing to Messrs. Ford of 1,530*l.* 13*s.* 5*d.*; but the latter being dissatisfied with it, and other disputes having arisen under the contract, recourse was had to the arbitration clause in the contract. It was alleged before the arbitrator, and the arbitrator found as a fact, that the quantities set forth and stated in the bill of quantities upon which tenders were invited were in material and substantial respects insufficient, and that the actual quantities of the works required to be executed in carrying out the works in accordance with the plans exceeded those in the bill of quantities. It was also alleged before the arbitrator, and found by him to be the fact, that it was a general usage in the building trade that where tenders are invited for the erection of works in accordance with plans, and a bill of quantities is furnished, a person making a tender is not expected to verify the quantities himself, but is expected to assume that the quantities are correct and to tender upon that assumption; that if such quantities proved to be greater or less than the actual quantities the price was to be reduced or increased by an amount ascertained and determined by the scale of prices given in the tender as the scale by which payment for extras were to be determined. The arbitrator also found as a fact that Messrs. Ford did not verify the quantities, and tendered and entered into the agreement on the assumption that the quantities were correct. He also found that various alterations of the works contracted for were decided upon during the progress of the works, and that the sum of 3,281*l.* was to be added to the contract price in respect of such alterations and deviations; that the total value of the work executed, at the prices upon which the contract was based, was 13,840*l.*; and that 8,750*l.* had been paid to Messrs. Ford by Messrs. Bemrose.

The questions left to the Court by the arbitrator to determine were:—

1. Whether in ascertaining the amount to be paid by Messrs. Bemrose to Messrs. Ford regard was to be had to the aforesaid usage in the building trade.

2. Whether Messrs. Ford were entitled only to be paid the sum of 10,559*l.* mentioned in the contract, with such deductions and additions as were by the contract provided to be made in respect of alterations or deviations from the original plans determined upon during the progress of the work, or

3. Whether Messrs. Ford were entitled to be paid the value of all the works actually executed by them at the prices upon which the contract was based, and whether such value should be more or less than the sum of 10,559*l.* mentioned in the contract.

The arbitrator certified that if the Court answered Question 1 in the affirmative, 5,090*l.* remained due to Messrs. Ford; Question 2 in the affirmative, 2,308*l.* 10*s.* was due to Messrs. Ford; and question 3 in the affirmative, 5,090*l.* was payable by Messrs. Bemrose to Messrs. Ford.

Mr. Joseph Walton, K.C., and Mr. Hudson appeared for Messrs. Ford & Co., and the Hon. Alfred Lyttelton, K.C., and Mr. Coventry for Messrs. Bemrose & Sons, Limited.

At the conclusion of the arguments of counsel, Mr. Justice Kennedy, in giving judgment, said that he and his learned brother were both of opinion that the builders were entitled to succeed. The builders accepted a contract to build certain structures for a definite sum of 10,559*l.*, and they accepted that burden upon the basis of a certain plan which formed part of the contract, and which showed what was to be built. They also accepted the contract on the basis that a document furnished by the building owners formed part of the contract, viz., a document which was in a sense a bill of quantities and in a sense a specification. The contract was accepted by the builder by a tender based upon that specification and upon the plan. In his opinion, he thought the builders had a right to say that they had contracted upon the basis of the accuracy of the representations contained in the quantities forming part of the specification. The builder said, "It is true I agreed to erect seventy-two buildings as planned for 10,559*l.*, but only upon the basis that the quantities required to be put into that building to perform my work do not exceed the quantities which you yourself represented in the specification were all that were necessary. In his Lordship's view, the true and logical way to put the builders' case before the arbitrator was that there had been a breach of that which they were entitled to treat as a representation or warranty forming part of the contract, and to the extent to which the warranty was not fulfilled, and they were thereby damaged, they would be entitled to receive compensation. His Lordship was of opinion that there was no reason to decide the question of usage raised before the arbitrator, because in the circumstances he should hold that the builders were entitled to recover the amount claimed irrespective of any custom or usage in such a case.

Mr. Justice Phillimore concurred, and judgment was accordingly entered for Messrs. Ford & Co., the builders, for 5,090*l.*

RECENT PATENTS:

ABSTRACTS OF PATENTED INVENTIONS.

27.—ELECTRICAL ARC LAMPS: *H. Lyon and J. B. Talbot-Crosbie.*—The frame of an enclosed arc lamp comprises a cover, a central tube, an insulated guide, and other parts; to a screwed projection from a plate is attached, with packing and a coupling-nut, a flanged arc-enclosing cylinder; a packed collar and nut clamp the lower carbon holder on to the cylinder, and a screw-nut fastens the upper carbon in a split socket mounted upon a tube that slides in a guide and is sustained with a clutch worked by the tubular core of series and shunt coils after the kind specified in No. 17,808 of 1894; plates carry the solenoids which have an adjustable stop-nut for limiting the stroke of the core; the tube which carries the split socket is passed through the core, and its piston, mounted upon a rod, acts as a dash-pot.

41.—BUILDERS' WORK: *A. Rincklake.* — For the construction of ceilings, roofs, and arches the inventor employs expanded or perforated metal or else wire gauze to serve as curved openwork permanent centres, to be fixed between the flanges of the girders. Over the centering thus obtained is stretched a cloth of jute canvas, and then layers of mortar, plaster, or cement; a layer of cement and masonry or brickwork should be filled in the space above.

57.—MEANS OF ESCAPE FROM FIRE: *J. F. Bates.*—The main principle of the invention lies in fitting lifts in the interior of hollow pillars or columns that are built up against the front of the building; the pillars are open at their sides, and persons can effect their escape by means of a platform (in front of the windows) from which they can make their way to cages within the pillars, the platform being hinged on the lift, from which it can be lowered out with a rope; in another shape a platform extends between two adjacent cages with which it will both rise and fall.

79.—REFACING OF VALVE SEATS: *A. A. Jones.*—A tool for use in refacing valve seats comprises a cone which is to be screwed into the opening in the valve casing, and a bush (mounted upon the same axis) which is then screwed down until a spiral spring beneath the cone forces the cutter against the valve seat, when the cutter can be turned with a wrench.

90.—TILES FOR ROOFING PURPOSES: *E. Hupertz and P. Breidenbach.*—The upper portion of the tile is dished and has an upper rib with a middle drainage channel or groove. At the top of the side groove is a projection that will prevent water from entering into the groove, whilst its flow is facilitated with recesses that are cut in the underside of the tile. A moulding machine for the tiles of clay, cement, and other materials has a metal mould-plate in a table. After the clay has been levelled with a straight-edge, the grooves are fashioned by means of two arms pivotted at 90 deg. in respect of one another at the sides of the table and moved by a counter-weighted foot-lever and links. Another foot-lever, which is pivotted on to a plate having vertical pins that slide through the table and press against the mould-plate serves for lifting the loose mould-plate with the moulded tile.

108.—NIPPERS FOR GRIPPING OR CUTTING PURPOSES: *W. A. Bernard.*—The jaws are pivotted on to connecting-plates as well as on to the hollow handles, and are spread out at their ends. To the handles and jaws are pivotted respectively two bars which extend beyond the handle-pivots, so that they may carry screws for stops. The nipper is held open, under ordinary conditions, by means of a spring that presses upon one handle and one bar. The plates and bars will freely pass over the wire or other work which is to be gripped or cut.

112.—A COMPOSITION FOR FLOORINGS, LININGS, AND OTHER PURPOSES: *S. F. Ridley, G. Whitley, and W. R. Whitley (Ridley, Whitley, & Co.).*—The material consists of granulated cork-waste, paper, wood, rags, mealy cobs, and other substances mixed with some binding material that contains lime and casein, subjected to great pressure and then heated to a temperature of between 100 deg. and 200 deg. Centigrade that will harden the casein. The compound is described as being available for many various uses, and reference is made to No. 19,459 of 1892.

151.—AN APPLIANCE FOR TRAPS: *W. Kesselring and E. Röthenbacher.*—The inventors' object is to provide means for preventing the trap from becoming unsealed. They provide it with an auxiliary plate so arranged as to form an additional passage which makes a junction between the top of the outlet chamber and the bottom of the inlet.

163.—ELECTRICAL SWITCHES: *P. C. McFarlane and D. Reid.*—For ensuring a make and a break periodically a contact-spring is fitted upon one of the arms of an escapement, from which, however, it is insulated. The spring is connected by means of a spring to a terminal, and at intervals will make contact with pins which are mounted upon the escapement wheel.

164. — INCANDESCENT LAMPS (ELECTRICAL): *C. M. Stead.*—The central reflector, which is surrounded with a filament, may be suspended with a thin glass stem from either end of the lamp-bulb. The filament consists of either a single coil or of a three or four fold filament carried near the reflector. If the lamp-bulb is made annular in shape it will encompass the filament and have an open recess for taking the silvered glass or opal ribbed reflector.

166.—A SPANNER: *T. W. Wills.*—The fixed jaw is mounted upon a toothed stem upon which the movable jaw slides; a block that slides crosswise through the movable jaw serves to lock it, and teeth upon the block are set in engagement with the teeth upon the stem of the movable jaw. When the plain portion of the block has been forced over the teeth upon the stem, the movable jaw is liberated for its necessary movement.

171.—PROCESS OF SAWING STONE: *J. T. Whettam.*—At the corner-posts of the carriage (constructed of angle and H-bars) are wheels which guide the saw-frame. Cranks and connecting-rods impart a reciprocating motion to the carriage, which is mounted upon wheels that run upon fixed rails, which are turned upwards at the end of the travel. The stone-trolley is caused to run underneath the carriage from one end, and the saw-frame can be raised by means of a winch. The frame has slotted bars at its ends in which the saws are secured with wedges.

187.—COPING-TILES: *W. A. Williams.*—Glass, slate, stone, concrete, metal, or other tiles are fashioned with angular, curved, or M-shaped sections, and with over-hanging gutters in order to prevent water from trickling down and wetting the walls. A stop or flange can be made at the end of the channel of the tile, together with an outlet hole for the attachment of a water-pipe, the end tiles have throated lips for carrying off water clear from the wall, and the tiles are set in cement with flanged, rebated, dove-tailed or tongued and grooved joints.

206.—A TOOL FOR LIFTING PURPOSES: *J. C. W. Schäper.*—For lifting heavy bodies as well as for extracting nails, and so on, is devised a tool which comprises a lever, of which the rounded end will roll upon the curved face of a frame or block. In order that the extreme point of the rounded end of the lever shall move in a vertical line, the radii of the curved surface and of the rounded end are in the ratio of 2 : 1. In order that the lever shall not slide downwards, it is pivoted on to a bar that slides horizontally, or it may be fitted with a pin that will slide within a horizontal slot cut in the frame or in a projection from the frame.

225.—MANUFACTURE OF BRICKS: *M. F. Solon.*—The bricks are composed of finely-pulverised and moulded marl dusted with ground clay, again pressed, and then, having been fired, dipped into a glazing solution and fired again. By another process the glaze and clay are mixed with the marl in the press.

230.—A FLOATING BATH, &c.: *T. Bradley.*—The floating bath, that may be used as a circus, theatre, and so on, is intended to be moored to and to form portion of a floating pier. The central bath is surrounded with water-tight compartments, and is fitted with a movable bottom secured with locking bolts to be worked by the hand. Upon the withdrawal of the bolts the bottom will rise and serve for a floor, which can be lowered by causing water to flow into the compartments which constitute the base of the floor. A side-stage is raised and lowered by similar means. Promenades, rows of seats, and stabling, &c., are ranged around the bath.

246.—AN ELECTRICAL CUT-OUT: *F. Headley.*—In a minimum magnetical cut-out the inventor fits a catch upon the connecting-bridge of the lever that will engage with a latch upon one end of another lever whose other end constitutes the armature of a series electro-magnet. The armature is kept out of the way with a spring, but will spring out to release the catch in the event of the current falling below minimum strength, whereupon the circuit-breaker is operated with another spring. For a maximum cut-out it is contrived that the catch shall be retained when the armature is away from the core, the catch being released through the attraction of the armature by the strength of the current.

286.—AN APPLIANCE FOR CRANES: *W. L. Spence.*—In the base of the crane roller chains that travel between skates and the rails are substituted for the customary wheels, a pinion serves for the traversing motion, and a chain may also be employed for driving the winding-barrel.

316.—THE MOULDING OF BRICKS: *J. L. Vandenheuvel.*—An endless chain turns an annular channel-iron frame which carries the moulds and is joined with eye-bolts or spokes to a hub, rollers upon cam rails carry forked pressing-plungers and the mould-table runs upon circular rails, provision is made for the automatical turning up and down of the pivotted covers of the moulds which remain closed during the operation of pressing, by means

of rollers—adapted for running upon a fixed c m rail—which carry vertical sliding-rods at whose upper ends are slotted arms which impinge upon the bell-crank levers on to which the covers are hinged, whilst rollers upon the cover tops press against circular plates beneath a radial beam.

320.—PLATES FOR ROOFING PURPOSES: *W. Martin.*—For cutting roofing-plates and clipping their corners before the plates are tinned. The feed-roller and a presser-roller of the machine feed the sheet or plate with an intermittent pressure, as spring arms worked with sector-shapened adjustable cams operate the presser-roller; a reciprocating bar carries the knives, and whilst the blank is being cut it is held up with automatically-moved pivotted arms that will again be opened outwards for the falling of the sheet.

MEETINGS.

FRIDAY, MAY 3.

Architectural Association Discussion Section. — Mr. E. Greenop on "The Ethics of Professional Advertising." 7 p.m.

Institution of Junior Engineers (Westminster Palace Hotel).—The Northcott prize paper on "How may the best efforts of Employers and Employed be exerted for their mutual advantage and for the National Benefit?" by Mr. William Powrie, will be read and discussed. 8 p.m.

Society of Arts (Howard Lectures).—Mr. Alfred C. Eborall on "Polyphase Electric Working." II. 8 p.m.

SATURDAY, MAY 4.

Architectural Association.—Visit to Newgate Gaol. 3 p.m.

British Institute of Certified Carpenters.—Mr. W. J. Collins on "Trades' Training in the Future."

Edinburgh Architectural Association. — Geological ramble in Queen's Park.

MONDAY, MAY 6.

Royal Institute of British Architects. — Annual general meeting. 8 p.m.

Society of Arts (Cantor Lectures).—Slr W. Chandler Roberts-Austen and Mr. T. Kirke Rose, D.Sc., on "Alloys." III. 8 p.m.

Society of Engineers.—Mr. T. B. Grierson on "The Treatment of Low-Grade Iron Ores for the Smelting Furnace." 7.30 p m.

Liverpool Architectural Society. — Annual general meeting. (1) Annual Report of Council and Financial Statement; (2) Election of Officers and Council for the Fifty-fourth Session; (3) Closing Address by the President, Professor F. M. Simpson. 6 p.m.

WEDNESDAY, MAY 8.

Institute of Sanitary Engineers.—General Purposes and Finance Committee at 4 p.m. Election Committee at 5.15 p.m. Council Meeting at 7 p.m.

THURSDAY, MAY 9.

Carpenters' Hall, London Wall (Lectures on Carpentry and Joinery).—Mr. S. Barter on "The Joinery of a Room." 7.30 p.m.

Institution of Electrical Engineers.—Mr. J. S. Highfield on "Storage Batteries in Electric Power Stations, Controlled by Reversible Boosters." 8 p.m.

FRIDAY, MAY 10.

Architectural Association.—(1) Mr. Alfred Hands, F.R.M.S., on "The Protection of Buildings from Lightning" (illustrated by lantern views); (2) Election of officers. 7.30 p.m.

Society of Arts (Howard Lectures).—Mr. Alfred C. Eborall on "Polyphase Electric Working." III. 8 p.m.

SATURDAY, MAY 11.

Royal Institution. — Professor W. M. Flinders Petrie on "The Rise of Civilisation in Egypt." I. 3 p.m.

Northern Architectural Association. — Visit to Collingwood-street and Quayside Buildings, Newcastle. 3 p.m.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

April 18.—By MILLER & ABBOTTS (at Banbury).

Hinton, Northants.—A freehold farmhouse and 93 a. 2 r. 3 p. £3,549

By TUCKETT & SON (at Kingston).

Surbiton Hill, Surrey.—Derby-rd., &c., six plots of building land, f. 415

April 19.—By C. W. DAVIES & SON.

Holloway.—13 to 19 (odd), Mayton-st., u.t. 64 yrs., g.r. 26*l.*, r. 122*l.* 1,290

34 to 40 (even), Enkel-st., u.t. 56 yrs., g.r. 29*l.* 8s., r. 120*l.* 1,265

57, 59, and 61, Roden-st., u.t. 55½ yrs., g.r. 22*l.* 18s., r. 94*l.* 955

44 and 46, Rupert-rd., u.t. 68 yrs., g.r. 12*l.*, r. 50*l.* 435

Hoxton.—21, Hyde-rd., f., r. 24*l.* 350

Islington.—21, Gibson-sq., u.t. 26½ yrs., g.r. 9*l.*, r. 46*l.* 315

2, 3, and 4, Sudeley-st., u.t. 25 yrs., g.r. 15*l.*, r. 108*l.* 750

51, Linton-st., u.t. 26 yrs., g.r. 4*l.* 4s., r. 35*l.* 250

City-road.—15, New Charles-st., u.t. 40 yrs., g.r. 6*l.*, r. 42*l.* 335

Bethnal Green.—13 and 19, Winchester-st., f. 535

By W. B. HALLETT.

King's Cross.—60 and 62, North-st., u.t. 42 yrs., g.r. 10*l.* 610

By W. W. READ & Co.

Hackney.—53, Eleanor-rd., u.t. 44 yrs., g.r. nil, r. 32*l.* £395

Hornchurch, Essex.—Upminster-rd., a freehold building estate, area 5 a. 0 r. 25 p.; also Netley, Burnside, and Ivy Cottage; High-st., two shops and houses and a cottage, f. 2,300

By RIDER & SONS.

Kilburn.—27 to 35 (odd), Granville-rd., u.t. 61 yrs., g.r. 36*l.* 15s. 1,250

By ROBINS & HINE.

Knightsbridge.—10, Hill-st., u.t. 38 yrs., g.r. 7*l.* 7s., r. 70*l.* 760

April 20.—By WILLSON & PHILLIPS (at Southend).

Southend-on-Sea, Essex.—Wimborne-rd., &c., thirty-three plots of building land, f. 976

Rochford-rd., a freehold building estate, 12¼ a. 2,400

Rochford-rd., two freehold enclosures, 31 a. 0 r. 36 p. 3,750

April 22.—By HY. CHAPMAN & CO.

Marylebone.—57, Weymouth-st., u.t. 33 yrs., g.r. 30*l.*, r. 120*l.* 975

5, South-st., u.t. 18 yrs., g.r. 34*l.*, r. 110*l.* 720

By FRANCIS DOD & Co.

Edmonton.—45 to 53 (odd), Hendon-rd., f. 1,220

Acton.—Heathfield-rd., Thornsett House, f., r. 70*l.* 1,200

Edmonton.—1, 2, and 3, Clifton-villas, u.t. 97 yrs., g.r. 4*l.* 10s. 435

By E. H. HENRY.

Clapham.—25, Cautley-avenue, u.t. 80 yrs., g.r. 14*l.*, r. 60*l.* 645

By REYNOLDS & EASON.

Kentish Town.—22, 24, and 26, Dalby-st., u.t. 66 yrs., g.r. 21*l.*, r. 90*l.* 1,015

Shepherd's Bush.—26, Richford-st., u.t. 41 yrs., g.r. 4*l.*, r. 30*l.* 280

49, Richford-st., u.t. 69 yrs., g.r. 6*l.*, e.r. 38*l.* .. 310

April 23.—By DEBENHAM, TEWSON, & Co.

Oxford-st.—No. 495, u.t. 49 yrs., g.r. 45*l.*, r. 50*l.* 25,850

By DOWSETT, KNIGHT & Co.

Bermondsey.—7a, Crucifix-lane, u.t. 66 yrs., g.r. 45*l.*, r. 150*l.* 1,400

By ROGERS, CHAPMAN, & THOMAS.

Pimlico.—109, Lupus-st., u.t. 32½ yrs., g.r. 12*l.*, r. 120*l.* 1,700

Fulham.—30, 32, and 34, Averill-st., u.t. 78 yrs., g.r. 16*l.* 10s. 605

By FRED VARLEY.

Finsbury Park.—35, Gloucester-rd., u.t. 57 yrs., g.r. 15*l.* 15s., e.r. 75*l.* 600

By WOOTTON & GREEN.

Brixton.—176 and 178, Coldharbour-lane, u.t. 63½ yrs., g.r. 14*l.* 8s., r. 82*l.* 850

By HERRING, SON, & DAW.

Paddington.—Praed-st., The Load of Hay p.-h., London-st., Ashton's Commercial Hotel, f.g.r. 12*l.*, reversion in 20 yrs. 71,000

Piccadilly.—43 and 45, Dover-st., u.t. 45 yrs., g.r. 89*l.* 5s., r. 1,025*l.* 6,520

Streatham.—1, Homefield-villas; also l.g.r. 5*l.*, u.t. 14½ yrs., g.r. 9*l.* 185

20 to 42 (even), Colmer-rd., u.t. 65½ yrs., g.r. 30*l.* 2,650

Brixton.—17 and 19, Elm Park, u.t. 51 yrs., g.r. 6*l.*, r. 50*l.* 510

By H. J. BROMLEY.

Lewisham.—14 and 16, Dermody-rd, u.t. 65 yrs., g.r. 8*l.* 400

Forest Hill.—122 and 124, Malham-rd., f. 500

By HENRY HENDRIKS (at Redditch).

Redditch, Worcester.—16 and 18, Bates-hill, f. .. 270

40 to 46 (even), Lodge-rd., f. 780

Hillsborough-rd., two freehold residences 565

By ORGILL, MARKS, & LAWRENCE (at Masons' Hall Tavern).

City of London.—New Bridge-st., The Albion Hotel, u.t. 21½ and 3½ yrs., r. 530*l.*, with goodwill 26,500

By WILLIAM ROLFE (at Masons' Hall Tavern).

Box Hill, Surrey.—The Burford Bridge Hotel, u.t. 16½ yrs., r. 237*l.* 10s., with goodwill 2,800

April 24.—By ERNEST OWERS.

Hampstead.—113, Greencroft-gardens, u.t. 87½ yrs., g.r. 11*l.*, e.r. 100*l.* 900

By R. TIDEY & SON.

De Beauvoir Town.—98 and 100, Buckingham-rd., u.t. 23½ yrs., g.r. 10*l.*, r. 72*l.* 515

Kingsland-rd.—No. 405, u.t. 11½ yrs., g.r. 6*l.* 17s. 6d., r. 42*l.* 200

Kingsland-rd.—No. 461, u.t. 24½ yrs., g.r. 6*l.*, e.r. 45*l.* 370

By WOODS & SNELLING.

Beckenham, Kent.—33 to 39 (odd), Clockhouse-rd., u.t. 88½ yrs., g.r. 28*l.*, r. 128*l.* 1,200

By DOUGLAS YOUNG & Co.

Byfleet, Surrey.—Dartnell-avenue, the Dartnell Park Estate (remaining portion), 44 a., f. 6,300

Balham.—Pickets-st., The Mission Hall, f., r. 15*l.* 280

South Essex Water Works.—200*l.* Ordinary 1861 stock 300

By BALCH & BALCH (at Camden Town).

Kentish Town.—61, Prince of Wales-crescent, u.t. 22 yrs., g.r. 5*l.* 5s., r. 38*l.* 215

8, Lupton-st., u.t. 66½ yrs., g.r. 7*l.* 10s., e.r. 50*l.* 525

Holloway.—11, Tavistock-ter., u.t. 37 yrs., g.r. 6*l.* 6s., e.r. 86*l.* 290

Highgate.—58, Raydon-st., u.t. 63 yrs., g.r. 5*l.* 5s. 230

Camden Town.—17, Elm-rd., u.t. 49½ yrs., g.r. 10*l.*, r. 40*l.* 410

35, Wrotham-rd., u.t. 50 yrs., g.r. 6*l.*, r. 34*l.* .. 400

April 25.—By J. H. BULMER.

Bermondsey.—4, Longley-st, u.t. 39½ yrs., g.r. 5*l.* 350

Lewisham.—14 to 28 (even), 38 and 40, Ennersdale-rd., u.t. 76 yrs., g.r. 42*l.* 2,640

Rotherhithe.—96 and 98, Abbeyfield-rd., u.t. 52 yrs., g.r. 9*l.*, r. 78*l.* 710

38 and 40, West-lane, u.t. 82 yrs., g.r. 12*l.*, r. 78*l.* 580

43, 45, and 47, Lower-rd., f. 1,070

75 and 77, Lower-rd., f. 730

By BRADSHAW BROWN & Co.

Limehouse.—111 and 113, Narrow-st., u.t. 93½ yrs., r. 120*l.*, and 12½ yrs., g.r. 10*l.* £350

By EDWIN EVANS.

Regent's Park.—Cumberland-market, &c., l.g.r. 17*l.*, u.t. 24 yrs., g.r. 5*l.* 10s. 210

Notting Hill.—20 and 22, Latimer-rd., u.t. 57½ yrs., g.r. 7*l.* 410

26, 28, and 30, Latimer-rd., also g.r. 4*l.* 10s., u.t. 58½ yrs., g.r. 18*l.* 620

32 to 44 (even), Latimer-rd., also l.g.r. 3*l.* 5s., u.t. 960 yrs., g.r. 26*l.* 1,500

Kentish Town.—16 to 23, Modbury-st., u.t. 48½ yrs. g.r. 48*l.* 2,540

17 and 18, Litcham-st., u.t. 53½ yrs., g r. 11*l.* .. 410

Pimlico.—27, Moreton-place, u.t. 27 yrs., g.r. 8*l.* 10s., r. 50*l.* 400

Clapham.—5, St. Luke's-rd., u.t. 82 yrs., g.r. 10*l.*, r. 48*l.* 440

Streatham.—Fallsbrook-rd., f.g.r. 5*l.* 10s., reversion in 97 yrs. 135

Wood Green.—2, 3, and 4, Ivydene-villas, u.t. 80½ yrs., g.r. 15*l.*, r. 75*l.* 585

Fulham.—63 to 79 (odd), Stephendale-rd., u.t. 87 yrs., g.r. 49*l.* 10s. 2,925

By FAREBROTHER, ELLIS, & Co.

Whatfield, &c., Suffolk.—Furneaux Farm, 241 a. 11 6p., f. 1,700

Elmset &c., Suffolk.—Rookery Farm, 188 a. 1 27 p., f. 1,500

Elmsett, Suffolk.—Manor Farm, 103 a. 3 r. 21 p., f. 860

City of London.—Charterhouse-st., the Red Lion p.h., f.g.r. 60*l.*, reversion in 28 yrs. 4,250

Wandsworth.—12 to 26 (even), Red Lion-st., f. .. 1,810

43 to 49 (odd), North-st., including a corner plot of land, f. 1,700

55 to 69 (odd), North-st., f. 3,150

77 to 91 (odd), North-st., area 9,000 ft., f. 1,410

93 to 99 (odd), North-st., area 7,000 ft., f. 950

By MONTAGUE HIBBARD & Co.

Enfield.—Rowantree-rd., Craigellachie and Lochnagar, f., r. 160*l.* 1 915

By W. F. LAING.

Mile End.—74, Globe-rd., f., e.r. 41*l.* 12s. 525

Old Ford.—27, Driffield-rd., f. 425

Woolwich, Kent.—62 and 196, Maxey-rd., u.t. 24 yrs., g.r. 4*l.* 10s. 365

Stepney.—78, Portland-st., u.t. 7½ yrs., g.r. 2*l.* .. 100

By C. C. & T. MOORE.

Spitalfields.—4, Palmer-st., f. 450

17 and 18, Freeman-st., f. 900

Bow.—69, 74 to 77, Wellington-rd., u.t. 57 yrs., g.r. 16*l.* 5s. 1,080

Mile End.—93, Burdett-rd., beneficial lease for 6½ yrs., r. 60*l.*, with goodwill, fixtures, &c. .. 680

Bloomsbury.—37, Gloucester-st., f., e.r. 65*l.* 1,010

By NEWBON, EDWARDS, & SHEPHARD.

Somers Town.—1 to 8, Chapel-mews, u.t. 36 yrs., g.r. 10*l.* 700

12, Chapel-st., u.t. 36 yrs., g.r. 8*l.* 10s. 335

Dalston.—29 to 35 (odd), Shrubland-rd., u.t. 41½ yrs., g.r. 15*l.* 15s., r. 128*l.* 1,365

De Beauvoir Town.—147, Southgate-rd., u.t. 26½ yrs., g.r. 6*l.*, e.r. 48*l.* 420

By STIMSON & SONS.

Finchley.—Long-lane, a plot of freehold land 200

1 and 2, Boldre-cott., f. 560

Blackfriars.—7, Great Charlotte-st., u.t. 11 yrs., g.r. 5*l.* 8s. 105

Brixton.—25, Holland-rd., u.t. 13 yrs., g.r., &c., 6*l.* 10s., r. 40*l.* 120

Clapham.—117, Bedford-rd., f., r. 42*l.* 550

Peckham.—22 and 24, Asylum-rd., u.t. 73½ yrs., g.r. 10*l.*, r. 60*l.* 710

New Cross.—38, Hunsden-rd., u.t. 61 yrs., g.r. 5*l.* 360

Brockley.—38, Adelaide-rd., u.t. 57 yrs., g.r., &c., 9*l.* 1s., e.r. 50*l.* 340

99, Wickham-rd., u.t. 76 yrs., g.r. 11*l.*, e.r. 80*l.* 680

Dulwich.—61, Wood-vale, u.t. 79 yrs., g.r. 10*l.*, e.r. 45*l.* 300

By Messrs. TROLLOPE.

Hyde Park.—10, Green-st., u.t. 82½ yrs., g.r. 107*l.* 13,500

Bayswater.—14, Dawson-place, f., r. 200*l.* 4,000

By HENRY HENDRIKS (at Birmingham).

Harborne, Staffs.—37 to 43 (odd), Lordswood-rd., r. 231*l.* 0s. 8d.; also l.g.r. 3*l.*, u.t. 81 yrs., g.r. 39*l.* 2,200

Castle Bromwich, Warwick.—Hodge Hill Common, The Elms, u.t. 72 yrs., g.r. 5*l.* 2s. 6d. .. 470

Aston, Warwick.—181 and 183, Albert-rd., u.t. 74½ yrs., g.r. 20*l.* 450

Small Heath, Warwick.—430, Coventry-rd., area 1,120 yds., f. 1,340

April 26.—By JOSHUA BAKER & SON.

Mill Hill.—Dean's-lane, Hale Lodge, 1 a. 3 r. 23 p., f. 1,930

By DOLMAN & PEARCE.

Hampstead.—Adelaide-rd., l.g.r.'s 98*l.* 10s., u.t. 46½ and 44½ yrs., g.r. 29*l.* 1,230

Eton-villas, l.g.r.'s 84*l.*, u.t. 50½ yrs., g.r. 28*l.* .. 1,030

Eton-rd., l.g.r.'s 21*l.*, u.t. 50½ yrs., g.r. 7*l.* 260

By C. R. LOWE.

Edgware-rd.—8, Titchborne-st., u.t. 21 yrs., g.r. 6*l.* 15s., e.r. 55*l.* 460

29, Titchborne-st., u.t. 19 yrs., g.r. 8*l.*, r. 50*l.* .. 420

By A. J. SHEFFIELD.

Finchley.—77 and 79, Station-rd., u.t. 78½ yrs., g.r. 12*l.*, r. 76*l.* 650

Poplar.—236 and 238, St. Leonard's-rd., u.t. 64 yrs., g.r. 9*l.*, e.r. 80*l.* 460

By E. & S. SMITH.

Clerkenwell.—33, Red Lion-st., f. 820

Commercial-rd. East.—F.g.r. 30*l.*, reversion in 63½ yrs. 720

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; e.r. for estimated rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent yd. for yard.

COMPETITIONS, CONTRACTS, AND PUBLIC APPOINTMENTS.

(For some Contracts, &c., still open, but not included in this List, see previous issues.)

COMPETITIONS.

Nature of Work.	By whom Advertised.	Premiums.	Designs to be delivered
*Fire Station, &c.	Manchester Corporation	300*l.*, 200*l.* and 100*l.*	July 31

CONTRACTS.

Nature of Work or Materials.	By whom Required.	Forms of Tender, &c., Supplied by	Tenders to be delivered
Tramway Depôt, near Trent Bridge	Nottingham City Council	A. Brown, Civil Engineer, Guildhall, Nottingham	May 6
Bridge at the Dale, Ainstable	Penrith R.D.C.	J. W. Smith, St. Andrew's-square, Penrith	do.
Farmhouse, Langarth, near Truro	.....	S. Hill, Architect, Redruth	do.
Chapel, Gelli, Rhondda Valley, Wales	.....	W. D. Morgan, Architect, 5, Bailey-street, Ton Pentre, R.S.O.	do.
House, Hatfield, Herts	.....	W. Marshall, Hatfield Park, Hatfield	do.
Alterations to Club Premises, Langley Moor, Durham	.....	G. W. Salkeld, High-street, Langley Moor	do.
Grand Stand, &c., Bramall-lane	Sheffield Cricket, &c., Club, Ltd.	A. Leitch, Engineer, 40, St. Enoch-square, Glasgow	do.
Chapel, Orford, Suffolk	.....	H. Winkworth, Architect, 3A, Hatton-court, Ipswich	May 7
Cottages, Edgar-street	Hereford Dwellings Company, Ltd.	G. H. Godsell, Architect, Palace Chambers, Hereford	do.
Engineering Works, Birstall, Yorks	.....	J. Barton & Son, Architects, Dewsbury	do.
Mill, &c., Miles Platting, Manchester	Lancs & Yorks Railway Company	R. C. Irwin, Hunt's Bank, Manchester	do.
Farm Buildings, Newton Rigg, Penrith	Cumberland County Council	G. Dale Oliver, County Architect	do.
Three Houses	Aberdare Co-op. Society, Ltd.	J. L. Smith & Davies, Architects, Aberdare	do.
Several Cottages	Strabane (Ireland) Union R.D.C	J. E. Sharkie, Council Offices, Strabane	do.
Alterations to Brewery, &c., Rhymney, Wales	.....	T. Roderick, Architect, Aberdare	do.
Additions to Schools, Port Errol	Cruden (Aberdeen) School Board	Jenkins & Marr, Civil Engineers, 16, Bridge-street, Aberdeen	do.
Pier Works	Sandown (I.W.) Pier Extension Co.	T. R. Saunders, Engineer, Belgrave Chambers, Ventnor, I.W.	May 8
Paving Works	Richmond Corporation	J. H. Brierley, Surveyor, Town Hall, Richmond	do.
Technical Institute, Cleethorpes	.....	F. Croft, Architect, Victoria Chambers, Grimsby	do.
Business Premises, Lossie-Wynd, Elgin	.....	C. C. Doig, Architect, Elgin	do.
Three Shops and Houses, Grimethorpe, near Barnsley	.....	R. W. Dixon, Architect, 8, Eastgate, Barnsley	do.
Additions to Chapel, Llwynypia, Wales	Primitive Methodist Trustees	Griffiths & Jones, Architects, Tonypandy	do.
Alterations at Workhouse, Minster	Isle of Thanet Union Guardians	L. Grant, Architect, High-street, Sittingbourne	do.
Thirty Cottages, Mountain Ash, Glam	Park Cottage Company, Ltd.	Morgan & Elford, Architects, Mountain Ash	do.
Wood Ceiling at Baptist Chapel, Golcar	.....	J. Berry, Architect, 9, Queen-street, Huddersfield	do.
Additions to Schools	Lindfield (Sussex) School Board	E. Waugh, Boltro-road, Hayward's Heath	May 9
Residence, Surgery, &c., Treorchy, South Wales	Dr. J. R. Armstrong	W. D. Morgan, Architect, 23, St. Mary-street, Cardiff	do.
Granite Road Metal	Stafford R.D.C.	W. Morgan, 4, Martin-street, Stafford	do.
Cart Sheds, &c., Burnley-road	Rawtenstall Corporation	A. W. Lawson, Civil Engineer, Municipal Offices, Rawtenstall	do.
Villa, Lower Wyke, Bradford	.....	J. F. Walsh & Nicholas, Archts., L. & Y. Bank Chmbrs., Halifax	May 10
Whinstone Road Metal	Sunderland R.D.C.	T. Young, Surveyor, Council Offices, Sunderland	do.
Steel Girders (500 tons)	L. & N.W. & G.W.R. Companies	A. E. Bolter, Paddington Station, London	do.
Water Supply Works, Baddesley Ensor, Atherstone	.....	Willcox & Raikes, Civil Engineers, 63, Temple-row, Birmingham	do.
House, near Bay Horse Station, Lancaster	Mr. H. G. Smith	J. Parkinson, Architect, 67, Church-street, Lancaster	do.
Reservoir Works, Highfield	Salford Corporation	L. C. Evans, Town Hall, Salford	do.
Additions to Police Station, Oswestry	Salop County Council	A. T. Davis, County Surveyor, Shire Hall, Shrewsbury	do.
House, Broighter, Ireland	Rev. W. Kane	M. A. Robinson, Architect, Richmond-street, Londonderry	May 11
Church, Newton, Aystermouth, Wales	Rev. H. Williams	E. M. B. Vaughan, Architect, Cardiff	do.
Wall, &c., Kingston-lane	Uxbridge Burial Board	W. L. Eves, Architect, 54, High-street, Uxbridge	do.
Art School, Falmouth	.....	O. Caldwell, Architect, Penzance	do.
Vestry, &c., Wesleyan Chapel, St. Agnes, Cornwall	.....	S. Hill, Architect, Redruth	do.
Eighteen Workmen's Dwellings	East Grinstead U.D.C.	R. Wilds, Surveyor, Council Offices, East Grinstead	May 13
Water Supply Works, Gillis-row	Armagh District Committee	— Dorman, County Surveyor, Court House, Armagh	do.
Street Works	Hindley (Lancs) U.D.C.	A. Holden, Civil Engineer, Cross-street, Hindley	do.
Business Premises, Porhan-lane, Falmouth	.....	W. Swift, Architect, 4, Princes-street, Truro	do.
Church School, Rowlands Gill	.....	F. R. N. Haswell, Architect, 77, Tyne-street, North Shields	do.
*Sewerage Works	Newport (Salop) U.D.C.	W. Wyatt, Engineer, 99, Radford-road, Leamington	do.
*School Buildings	Abingdon School Board	Offices, 33, Bath-street, Abingdon	May 14
Cottages	Esher and The Dittons U.D.C.	Engineer, Council Offices, Portsmouth-road, Thames Ditton	do.
*Extension of Board Room, &c.	Wandsworth and Clapham Union	Lansdell & Harrison, Architects, 38, Bow-lane, Cheapside, E.C.	May 15
Water Supply Works	Chapel-en-le-Frith R.D.C.	Sterling & Swann, Civil Engineers, Town Hall, Chapel-en-le-Frith	do.
*Alterations, &c., to Laundry	Hendon Guardians	H. T. Hare, Architect, 13, Hart-street, Bloomsbury, W.C.	do.
*Machinery, Boilers, &c.	do.	do.	do.
Homes, Dunstable-road	Luton Guardians	B. B. Franklin, Architect, 21, Market-hill, Luton	May 18
Street Works, Gloucester-street, &c.	Norwich Corporation	A. E. Collins, Civil Engineer, Guildhall, Norwich	do.
*Electric Lighting Station	Hornsey U.D.C.	Engineer, Council Offices, Southwood-lane, Highgate, N.	May 20
*Furniture	East Ham School Board	Clerk, School Board Offices, East Ham, E.	do.
*Market Hall, &c.	Leeds Corporation	See Advertisement	May 22
*Shops and Office Premises	Walthamstow Parochial Charities	W. A. Longmore, Bridge-chambers, Hoe-street, Walthamstow	May 23
Church Works, Rotherham	.....	F. R. Brown, 5, Henry-street, Rotherham	No date
Underground Convenience, Ashton-under-Lyne	Newcastle Corporation	Burton & Percival, Archts., 180A, Stamford-st., Ashton-under-Lyne	do.
Alterations, &c. to Car Sheds, Haymarket and Gosforth	Exors. of the late J. T. Newbold	A. E. Le Rossignol, Engineer, Pandon Buildings, Newcastle	do.
Two Shops, Stanley-street, Bury, Lancs	.....	Openshaw & Gill, Architects, Derby Chambers, Fleet-street, Bury	do.
House, Fintona, Ireland	.....	J. L. Donnelly, Architect, 24, High-street, Omagh	do.
Alterations to the "New Tun," Sowerby Bridge	.....	W. H. D. Horsfall, Architect, Tower Chambers, Halifax	do.
Three Houses, Treeton, Yorks	.....	S. Land, Treeton, Yorks	do.
Additions to National Schools, Old Newton, Suffolk	.....	A. J. Lacey, Architect, 6, Upper King-street, Norwich	do.
Road Metal	Newbury Town Council	S. J. L. Vincent, Borough Surveyor, Town Hall, Newbury	do.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary.	Application to be in
*Clerk of Works	Cannock U.D.C.	3 Guineas per week	May 10
*Architectural Draughtsman	Plymouth Corporation	100*l.* per annum	May 18
*District Road Surveyors (Four)	Nottingham Corporation	175*l.* per annum	do.
*Borough Engineer and Surveyor	Hampstead Borough Council	600*l.* per annum	May 20
General Superintendent of Roads	do.	200*l.* per annum	do.
*Draughtsman	Middlesbrough Corporation	.....	May 22
*County Surveyor	Breconshire County Council	250*l.* per annum	June 1

Those marked with an asterisk (*) are advertised in this Number. *Competitions*, p. iv. *Contracts*, pp. iv. vi. viii. x. & xx. *Public Appointments*, pp. xviii. & xx.

PRICES CURRENT OF MATERIALS.

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

	£ s. d.		
Hard Stocks	1 14 6	per 1,000	alongside, in river.
Rough Stocks and Grizzles	1 11 0	,,	,, ,,
Facing Stocks	2 12 0	,,	,, ,,
Shippers	2 8 0	,,	,, ,,
Flettons	1 9 0	,,	at railway depot.
Red Wire Cuts	1 15 6	,,	,, ,,
Best Fareham Red	3 11 0	,,	,, ,,
Best Red pressed Ruabon Facing	5 5 0	,,	,, ,,
Best Blue Pressed Staffordshire	4 4 6	,,	,,
Do., Bullnose	4 9 0	,,	,, ,,
Best Stourbridge Fire Bricks	4 2 6	,,	,, ,,
GLAZED BRICKS.			
Best White and Ivory Glazed Stretchers	13 0 0	,,	,, ,,
Headers	12 0 0	,,	,, ,,
Quoins, Bullnose, and Flats	17 0 0	,,	,, ,,
Double Stretchers	19 0 0	,,	,, ,,
Double Headers	16 0 0	,,	,, ,,
One Side and two Ends	19 0 0	,,	,, ,,
Two Sides and one End	20 0 0	,,	,, ,,
Splays, Chamfered, Squints	20 0 0	,,	,, ,,
Best Dipped Salt Glazed Stretchers and Headers	12 0 0	,,	,, ,,
Quoins, Bullnose, and Flats	14 0 0	,,	,, ,,
Double Stretchers	15 0 0	,,	,, ,,
Double Headers	14 0 0	,,	,, ,,
One Side and two Ends	15 0 0	,,	,, ,,
Two Sides and one End	15 0 0	,,	,, ,,
Splays, Chamfered, Squints	14 0 0	,,	,, ,,
Seconds Quality White and Dipped Salt Glazed	2 0 0	,,	less than best

	s. d.		
Thames and Pit Sand	7 3	per yard, delivered.	
Thames Ballast	6 0	,,	,,
Best Portland Cement	36 6	per ton	,,
Best Ground Blue Lias Lime	25 6	,,	,,

NOTE.—The cement and lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime	13s 6d.	per yard, delivered
Stourbridge Fire-clay in sacks, 28s. od.		per ton at rly. dpt.

STONE.

	s. d.		
Ancaster in blocks	2 0	per ft. cube, deld.	rly. depôt.
Bath ,,	1 7	,,	,,
Farleigh Down Bath	1 8	,,	,,
Beer in blocks	1 6½	,,	,,
Grinshill ,,	1 10	,,	,,
Brown Portland in blocks	2 2	,,	,,
Darley Dale in blocks	2 1½	,,	,,
Red Corsehill ,,	2 5	,,	,,
Red Mansfield ,,	2 4½	,,	,,
Hard York in blocks	2 10	,,	,,
Hard York 6 in. sawn both sides landings, to sizes (under 40 ft. sup.)	s. d. 2 8	per ft. super.	at rly. depôt
,, ,, 6 in. Rubbed Ditto	3 0	,,	,,
,, ,, 3 in. sawn both sides slabs (random sizes)	1 3	,,	,,
,, ,, 3 in. self-faced Ditto	0 9½	,,	,,

SLATES.

in. in.	£ s. d.		
20X10 best blue Bangor	11 5 0	per 1000 of 1200	at ry. dep.
,, best seconds ,,	10 15 0	,,	,,
16X 8 best ,,	6 2 6	,,	,,
20X10 best blue Portmadoc	10 18 0	,,	,,
16X 8 best blue Portmadoc	6 0 0	,,	,,
20X10 best Eureka unfading green	11 2 6	,,	,,
16X 8 ,, ,,	6 15 0	,,	,,
20X10 Permanent green	10 0 0	,,	,,
16X 8 ,, ,,	5 12 6	,,	,,

TILES.

	s. d.		
Best plain red roofing tiles	41 6	per 1,000	at rly. depôt.
Hip and valley tiles	3 7	per doz.	,, ,,
Best Broseley tiles	48 6	per 1,000	,, ,,
Hip and valley tiles	4 0	per doz.	,, ,,
Best Ruabon Red, brown or brindled Do. (Edwards)	57 6	per 1,000	,, ,,
Do. ornamental Do.	60 0	,,	,, ,,
Hip tiles	4 0	per doz.	,, ,,
Valley tiles	3 9	,,	,, ,,
Best Red or Mottled Staffordshire Do. (Peakes)	50 9	per 1,000	,, ,,
Hip tiles	4 1	per doz.	,, ,,
Valley tiles	3 8	,,	,, ,,

WOOD.

BUILDING WOOD.—YELLOW.

	At per standard. £ s. d.	£ s. d.
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in.	16 10 0	18 0 0
Deals: best 3 by 9	14 10 0	15 10 0
Battens: best 2½ in. by 7 in. and 8 in. and 3 in. by 7 in. and 8 in.	12 10 0	13 10 0
Battens: best 2½ by 6 and 3 by 6	0 10 0	less than 7 in. and 8 in.
Deals: seconds	1 0 0	less than best
Battens: seconds	0 10 0	,, ,, ,,

PRICES CURRENT (*Continued*).

WOOD.

	At per load of 50 ft. £ s. d.	£ s. d.
Fir timber: Best middling Danzig or Memel (average specification)	4 10 0	5 0 0
Seconds	4 5 0	4 10 0
Small timber (8 in. to 10 in.)	3 12 6	3 15 0
Swedish balks	2 15 0	3 0 0
Pitch pine timber (35 ft. average)	4 0 0	4 10 0
JOINERS' WOOD.	At per standard.	
White Sea: First yellow deals, 3 in. by 11 in.	27 10 0	28 10 0
3 in. by 9 in.	24 0 0	25 0 0
Battens, 2½ in. and 3 in. by 7 in.	20 0 0	21 0 0
Second yellow deals, 3 in. by 11 in.	22 10 0	24 0 0
,, ,, 3 in. by 9 in.	20 0 0	21 0 0
Battens, 2½ in. and 3 in. by 7 in.	16 10 0	18 0 0
Third yellow deals, 3 in. by 11 in. and 9 in.	16 10 0	18 0 0
Battens, 2½ in. and 3 in. by 7 in.	13 10 0	14 10 0
Petersburg: first yellow deals, 3 in. by 11 in.	25 0 0	26 0 0
Do. 3 in. by 9 in.	22 0 0	23 0 0
Battens	16 10 0	17 10 0
Second yellow deals, 3 in. by 11 in.	18 10 0	20 0 0
Do. 3 in. by 9 in.	17 0 0	18 0 0
Battens	14 0 0	14 10 0
Third yellow deals, 3 in. by 11 in.	15 0 0	16 10 0
Do. 3 in. by 9 in.	14 0 0	14 10 0
Battens	12 10 0	13 10 0
White Sea and Petersburg:—		
First white deals, 3 in. by 11 in.	15 10 0	16 10 0
,, ,, ,, 3 in. by 9 in.	14 0 0	15 0 0
Battens	12 10 0	13 10 0
Second white deals 3 in. by 11 in.	14 0 0	15 0 0
,, ,, ,, 3 in. by 9 in.	13 0 0	14 0 0
,, ,, battens	11 0 0	12 0 0
Pitch pine: deals	16 0 0	18 0 0
Under 2 in. thick extra	0 10 0	1 0 0
Yellow Pine—		
First, regular sizes	30 0 0	33 0 0
Broads (12 in. and up)	2 0 0	more.
Oddments	22 0 0	24 0 0
Seconds, regular sizes	24 10 0	26 10 0
Yellow Pine Oddments	20 0 0	22 0 0
Kauri Pine—		
Planks, per ft. cube	0 3 6	0 4 6
Danzig and Stettin Oak Logs—		
Large, per ft. cube	0 2 6	0 2 8
Small ,, ,,	0 2 4	0 2 7
Wainscot Oak Logs, per ft. cube	0 5 0	0 5 6
Dry Wainscot Oak, per ft. sup. as inch	0 0 8	0 0 7
in. do. do.	0 0 7	- - -
Dry Mahogany—		
Honduras, Tabasco, per ft. sup. as inch	0 0 9	0 0 11
Selected, Figury, per ft. sup. as inch	0 1 6	0 2 0
Dry Walnut, American, per ft. sup. as inch	0 0 10	0 1 0
Teak, per load	16 0 0	20 0 0
American Whitewood Planks—		
Per ft. cube	0 2 3	0 3 0

JOISTS, GIRDERS, &c.

	In London, or delivered to Railway Vans, per ton. £ s. d.	£ s. d.
Rolled Steel Joists, ordinary sections	7 15 0	8 15 0
Compound Girders ,, ,,	9 10 0	10 15 0
Angles, Tees and Channels, ordinary sections	9 7 6	11 7 6
Flitch Plates	9 15 0	10 10 0
Cast Iron Columns and Stanchions, including ordinary patterns	8 5 0	10 0 0

METALS.

	Per ton, in London. £ s. d.	£ s. d.
IRON.—		
Common Bars	9 10 0	- - -
Staffordshire Crown Bars, good merchant quality	9 15 0	10 0 0
Staffordshire "Marked Bars"	11 10 0	- - -
Mild Steel Bars	9 10 0	10 10 0
Hoop Iron, basis price	10 5 0	10 15 0
,, ,, galvanised	16 0 0	- - -
,, (* And upwards, according to size and gauge.)		
Sheet Iron, Black.—		
Ordinary sizes to 20 g.	10 15 0	- - -
,, ,, to 24 g.	11 15 0	- - -
,, ,, to 26 g.	13 5 0	- - -
Sheet Iron, Galvanised, flat, ordinary quality.—		
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	13 0 0	- - -
,, ,, 22 g. and 24 g.	13 15 0	- - -
,, ,, 26 g.	15 10 0	- - -
Sheet Iron, galvanised, flat, best quality.—		
Ordinary sizes to 20 g.	17 0 0	- - -
,, ,, 22 g. and 24 g.	17 10 0	- - -
,, ,, 26 g.	19 0 0	- - -
Galvanised Corrugated Sheets.—		
Ordinary sizes, 6 ft. to 8 ft. 20 g.	13 0 0	- - -
,, ,, 22 g. and 24 g.	13 10 0	- - -
,, ,, 26 g.	14 0 0	1 10 0
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. by 20 g. and thicker	13 0 0	- - -
,, ,, 22 g. and 24 g.	14 0 0	- - -
,, ,, 26 g.	15 0 0	- - -
Cut nails, 3 in. to 6 in. (Under 3 in. usual trade extras.)	11 10 0	- - -
LEAD—Sheet, English, 3 lbs. & up.	15 10 0	- - -
Pipe in coils	16 0 0	- - -
Soil Pipe	18 10 0	- - -
ZINC—Sheet—		
Vieille Montagne ton	24 0 0	- - -
Silesian	23 10 0	- - -
COPPER—		
Strong Sheet per lb.	0 1 0½	- - -
Thin ,,	0 1 2	- - -
Copper nails ,,	0 1 2	- - -

METALS.

	£ s. d.	£ s. d.
BRASS—		
Strong Sheet per lb.	0 0 11	- - -
Thin ,,	0 1 1	- - -
TIN—English Ingots ,,	0 1 4	- - -
SOLDER—Plumbers' ,,	0 0 7	- - -
Tinmen's ,,	0 0 8	- - -
Blowpipe ,,	0 0 9	- - -

ENGLISH SHEET GLASS IN CRATES.

15 oz. thirds	3d.	per ft.	delivered.
,, fourths	2¾d.	,,	,,
21 oz. thirds	3¾d.	,,	,,
,, ,, fourths	3½d.	,,	,,
26 oz. thirds	5d.	,,	,,
,, ,, fourths	4½d.	,,	,,
32 oz. thirds	6d.	,,	,,
,, ,, fourths	5½d.	,,	,,
Fluted sheet, 15 oz.	3½d.	,,	,,
,, ,, 21 ,,	4½d.	,,	,,
½ Hartley's Rolled Plate	3d.	,,	,,
⅓ ,, ,, ,,	3½d.	,,	,,
¼ ,, ,, ,,	4d.	,,	,,

OILS, &c.

	£ s. d.	
Raw Linseed Oil in pipes	per gallon	0 2 6
,, ,, ,, in barrels	,,	0 2 7
,, ,, ,, in drums	,,	0 2 9
Boiled ,, ,, in pipes	,,	0 2 8
,, ,, ,, in barrels	,,	0 2 9
,, ,, ,, in drums	,,	0 2 11
Turpentine, in barrels	,,	0 2 6
,, in drums	,,	0 2 8
Genuine Ground English White Lead	per ton	24 10 0
Red Lead, Dry	,,	24 10 0
Best Linseed Oil Putty	per cwt.	0 9 0
Stockholm Tar	per barrel	1 10 0

VARNISHES, &c.

	per gallon £ s. d.
Fine Elastic Copal Varnish for outside work	0 16 6
Best Elastic Copal Varnish for outside work	1 0 0
Best Elastic Carriage Varnish for outside work	0 16 6
Best Hard Oak Varnish for inside work	0 10 6
Best Extra Hard Church Oak Varnish for inside work	0 10 6
Fine Hard Copal Varnish for inside work	0 16 0
Best Hard Copal Varnish for inside work	1 0 0
Best Hard Carriage Varnish for inside work	0 16 0
Extra Pale Paper Varnish	0 12 0
Best Japan Gold Size	0 10 0
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 9 0
Berlin Black	0 15 0
Knotting	0 10 0
Best French and Brush Polish	0 10 0

TO CORRESPONDENTS.

E. L. (Next week).

NOTE.—The responsibility of signed articles, letters, and papers read at meetings, rests, of course, with the authors.

We cannot undertake to return rejected communications.

Letters or communications (beyond mere news items) which have been duplicated for other journals are NOT DESIRED.

We are compelled to decline pointing out books and giving addresses.

Any commission to a contributor to write an article is given subject to the approval of the article, when written by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

All communications regarding literary and artistic matters should be addressed to THE EDITOR; those relating to advertisements and other exclusively business matters should be addressed to THE PUBLISHER, and *not* to the Editor.

TENDERS.

[Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than 10 a.m. on Thursdays.* N.B.—We cannot publish tenders unless authenticated either by the architect or the building-owner; and we cannot publish announcements of tenders accepted unless the amount of the tender is given, nor any list in which the lowest tender is under £100, unless in some exceptional cases and for special reasons.]

* Denotes *accepted.* † Denotes *provisionally accepted.*

ABERDEEN.—For new Greyfriars Church, Aberdeen, for Aberdeen Town Council, under special Act of Parliament for extension of Marischal College:—

Masonry.—Pringle & Glessor, Aberdeen	£7,299 0 0
Plastering.—Stephen & Sons, Aberdeen	177 13 0
Joinery.—Macandrew & Sons, Aberdeen	1,030 0 0
Painting.—J. Whyte, Aberdeen	134 0 0
Slating.—Adam & Co., Aberdeen	88 5 0
Electric Lighting.—A. G. Elmslie, Abeerdeen	93 0 0
Ironmongery.—Bladen & Co., Glasgow	126 2 8
Heating.—Shinas, Laing, & Co., Aberdeen	122 0 0
Plumbing.—J. Dean, Aberdeen, to pay £59 10s., the contractor receiving pipes and other old material.	

[Schedule of quantities by the architect, Mr. A. Marshall Mackenzie, A.R.S.A., Aberdeen.]

[*See also next page.*

AYTHORP ROOTHING (Essex).—For a pair of cottages. Mr. R. Mawhood, architect :—

E. Hockley	£365	F. Harman, Dunmow*	£320
T. Harris	350		

BARROW-IN-FURNESS.—For the erection of school buildings, Vickerstown, for the School Board. Mr. H. T. Fowler, architect, Ramsden-square, Barrow-in-Furness. Quantities by the architect :—

Excavating, Drainage, Bricklaying, and Joinery.

Clarke & Robinson, Barrow*	£5,332	0	0

Stonemasonry.

George Varley, Barrow*	745	5	0

Plumbing, Glazing, and Painting.

James Gell, Barrow*	605	11	2

Slating and Plastering.

James Walker, Barrow*	825	0	0

Smith and Heating Apparatus.

Wm. Barrett, Barrow*	565	18	6
Total	£8,073	14	8

CHELMSFORD.—For five villas on the Broomfield-road. Mr. R. Mawhood, architect, Chelmsford :—

	EACH.
F. Johnson	£797
Moss & Co.	750
F. Weight, Chelmsford*	745

GATESHEAD.—For the erection of school buildings, Kelvin-grove, for the School Board. Mr. J. Landell-Nicholson, architect, 55, Northumberland-street, Newcastle. Quantities by Mr. George Bell, Newcastle :—

W. C. Tyrie	£12,196	5	8	Thos. George	£11,236	14	0
S. Sheriff	12,005	18	1	J. Elliott	10,670	0	0
T. & R. Lamb	11,869	7	7	W. Foster	10,459	0	0
T. Weatheritt	11,694	5	11	Thos. Hunter, Washington*	9,959	10	0
J. C. Hope	11,662	11	8				
J. Bewley	11,265	6	10				

GLOUCESTER.—For the erection of Primitive Methodist church and schools, Stroud-road. Mr. Harry A. Dancey, architect and quantity surveyor, 26, Clarence-street, Gloucester :—

A. J. Dolman	£2,022	0	0	J. Simmonds	£1,880	0	0
W. Jones	1,932	0	0	T. J. Williams	1,866	0	0
Gurney & Sons	1,923	3	8	W. T. Nicholls	1,854	14	0
Halls Bros.	1,906	0	0	W. Byard*	1,854	0	0
				[All of Gloucester.]			

LEICESTER.—For extension of the Leicester Infirmary. Messrs. Everard & Pick, architects, Leicester :—

Clark & Garrett	£11,130	T. Herbert	£10,679
Hutchinson & Son	10,989	Moss & Sons	10,500
Johnson & Sons	10,880	Herbert & Sons	10,497
H. Bland	10,757		

LITTLE WALTHAM.—For additions to Cranham Lodge. Mr. R. Mawhood, architect :—

G. Holland, Gt. Leighs, Essex*	£650

LONDON.—For the erection of shops at East Ham, London, E. Mr. Herbert Riches, architect, 3, Crooked-lane, King William-street, E.C. :—

Sheffield Bros.*	£3,120

LONDON.—For work at the Neville Arms, Stoke Newington, London, N. Messrs. Foulsham and Herbert Riches, architects, 3, Crooked-lane, King William-street, E.C., and Bromley-by-Bow, E. :—

T. J. Dartnell	£302	10	J. T. Robey* £293 0
C. Chapman	295	0	

LONDON.—For terrazzo paving, St. Pancras Baths, &c., for the Borough Council of St. Pancras. Messrs. T. W. Aldwinckle & Son, architects :—

J. & H. Paterson	1st quality	..	£1,952	0	0
Burke & Co.	,,	..	1,835	0	0
Art Pavements and Decorations, Ltd. (late De Grelle, Houdret, & Co.)	,,	..	1,460	0	0
Ditto.	2nd quality (Granito)	..	1,360	0	0
Simpson & Co.	1st quality	..	1,447	10	7
Carter, Johnson, & Co.	,,	..	1,390	0	0
Mosaic Manufacturing Company	,,	..	1,350	5	9
Ditto.	2nd quality	..	1,258	18	3
Westminster Patent Flooring Company	Imperial	..	1,396	0	0
Ditto.	Ordinary	..	1,245	0	0
Ditto.	Granito	..	1,195	0	0
Mainzer & Co., Arrolithic Patent	1st quality	..	1,346	0	0
Ditto.	2nd quality	..	1,258	0	0
Mainzer & Co., Ordinary Terrazzo	1st quality	..	1,258	4	0
Ditto.	2nd quality	..	1,170	0	0
Diespeker & Co.*	1st quality	..	1,332	18	4
	Do. screeding done by own men		1,289	6	0
Ditto.	2nd quality	..	1,214	3	0
	Do. screeding done by own men		1,170	10	8

TERMS OF SUBSCRIPTION.

"THE BUILDER" (Published Weekly) is supplied DIRECT from the Office to residents in any part of the United Kingdom, at the rate of 19s. per annum (52 numbers) PREPAID. To all part of Europe, America, Australia, New Zealand, India, China, Ceylon, &c., 26s. per annum. Remittances (payable to DOUGLAS FOURDRINIER) should be addressed to the publisher of "THE BUILDER," Catherine-street, W.C.

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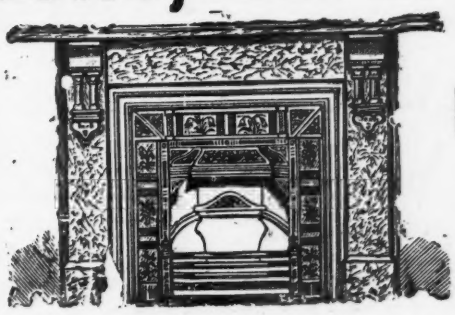

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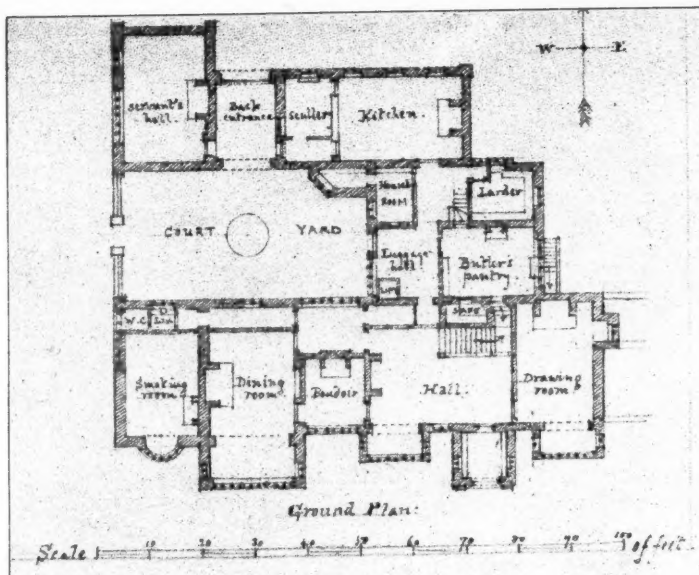

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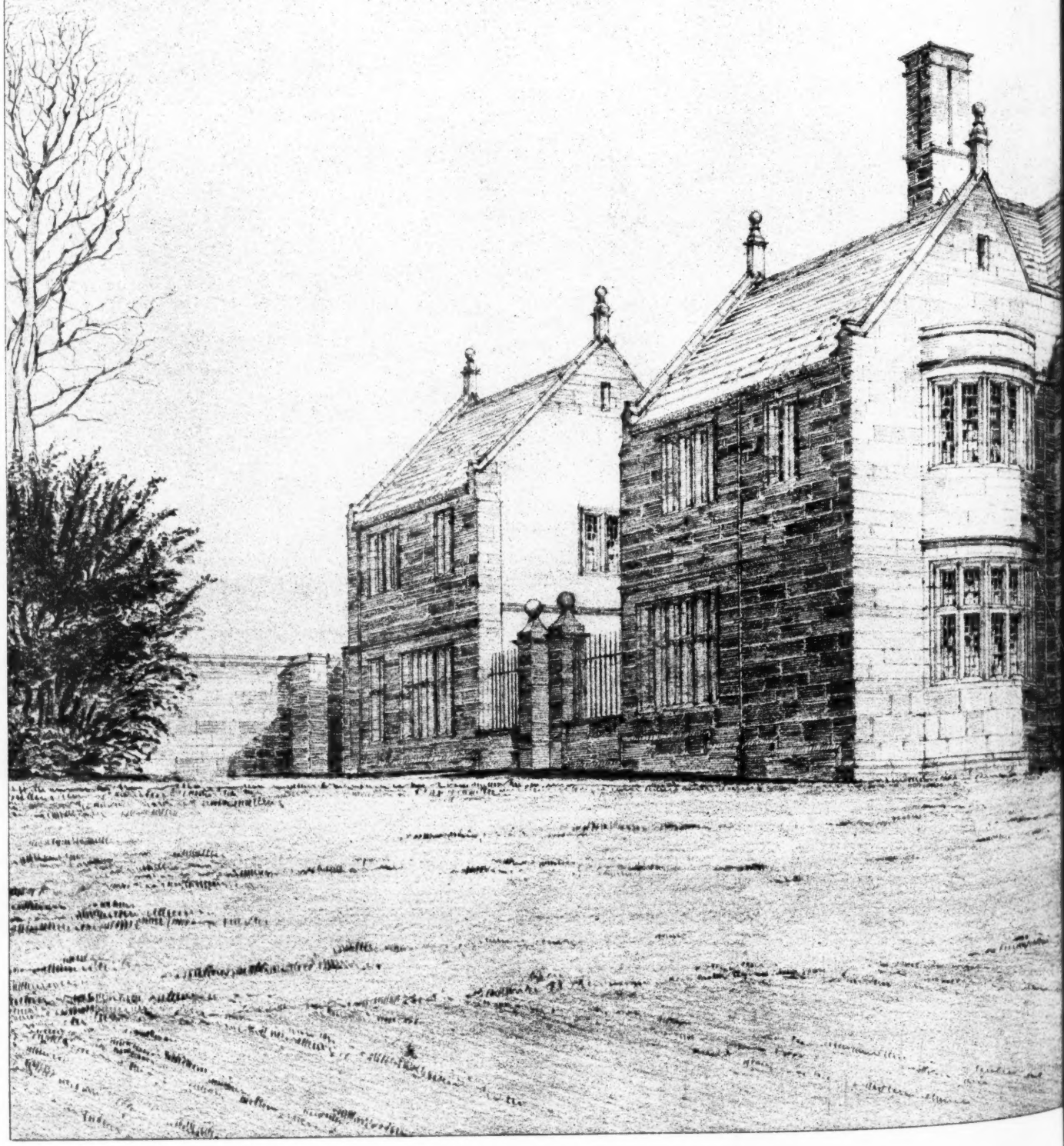

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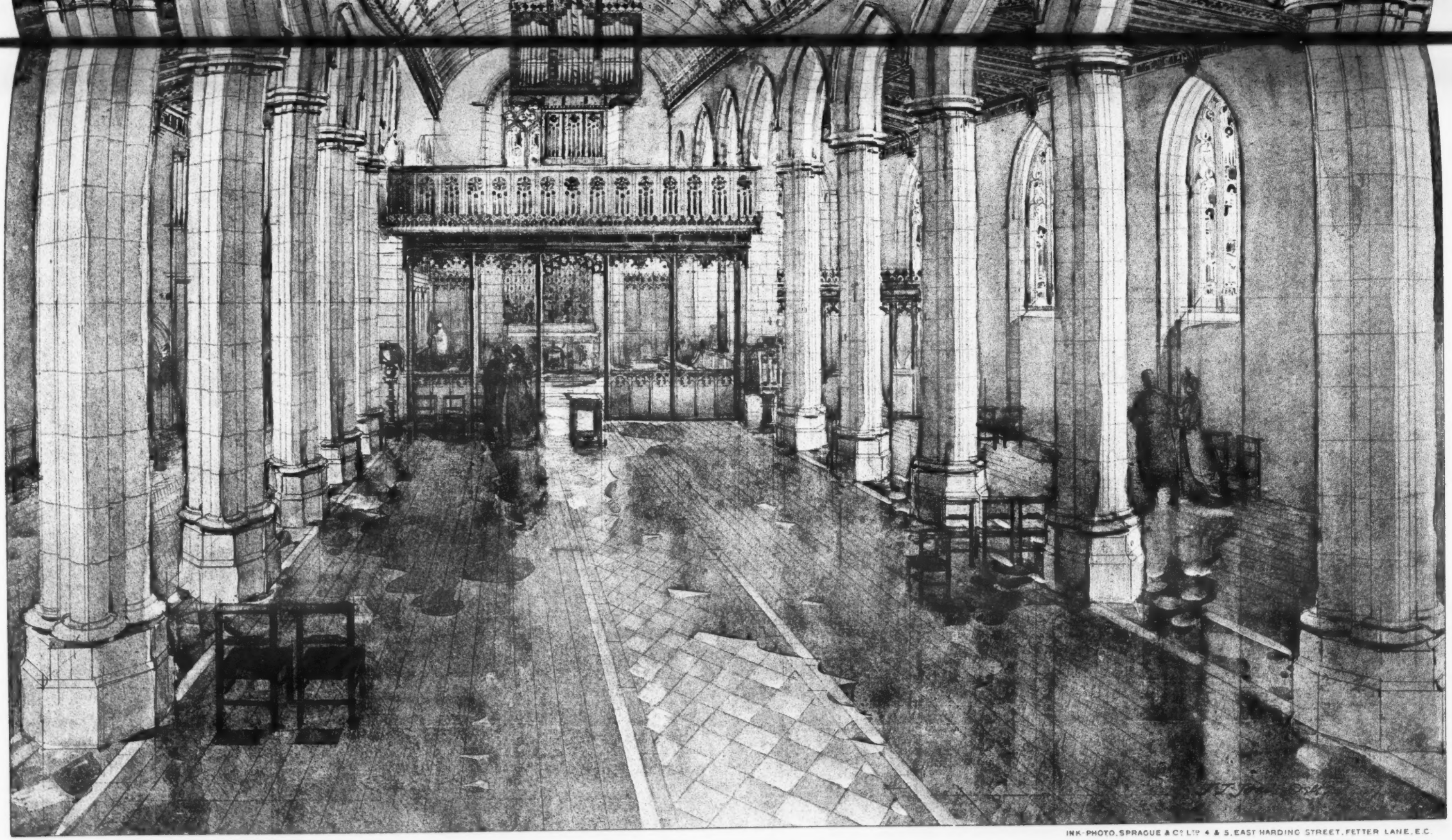

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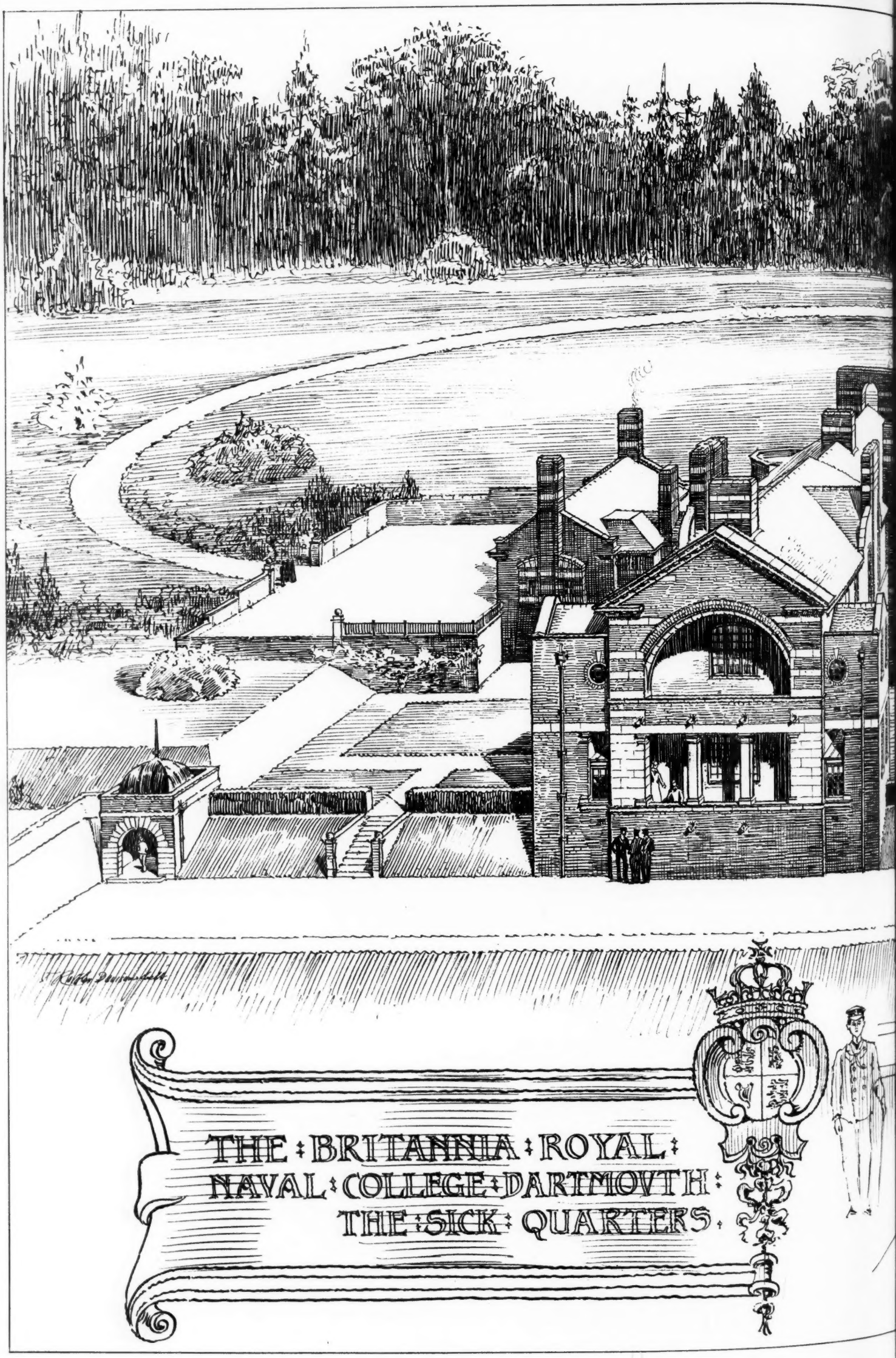

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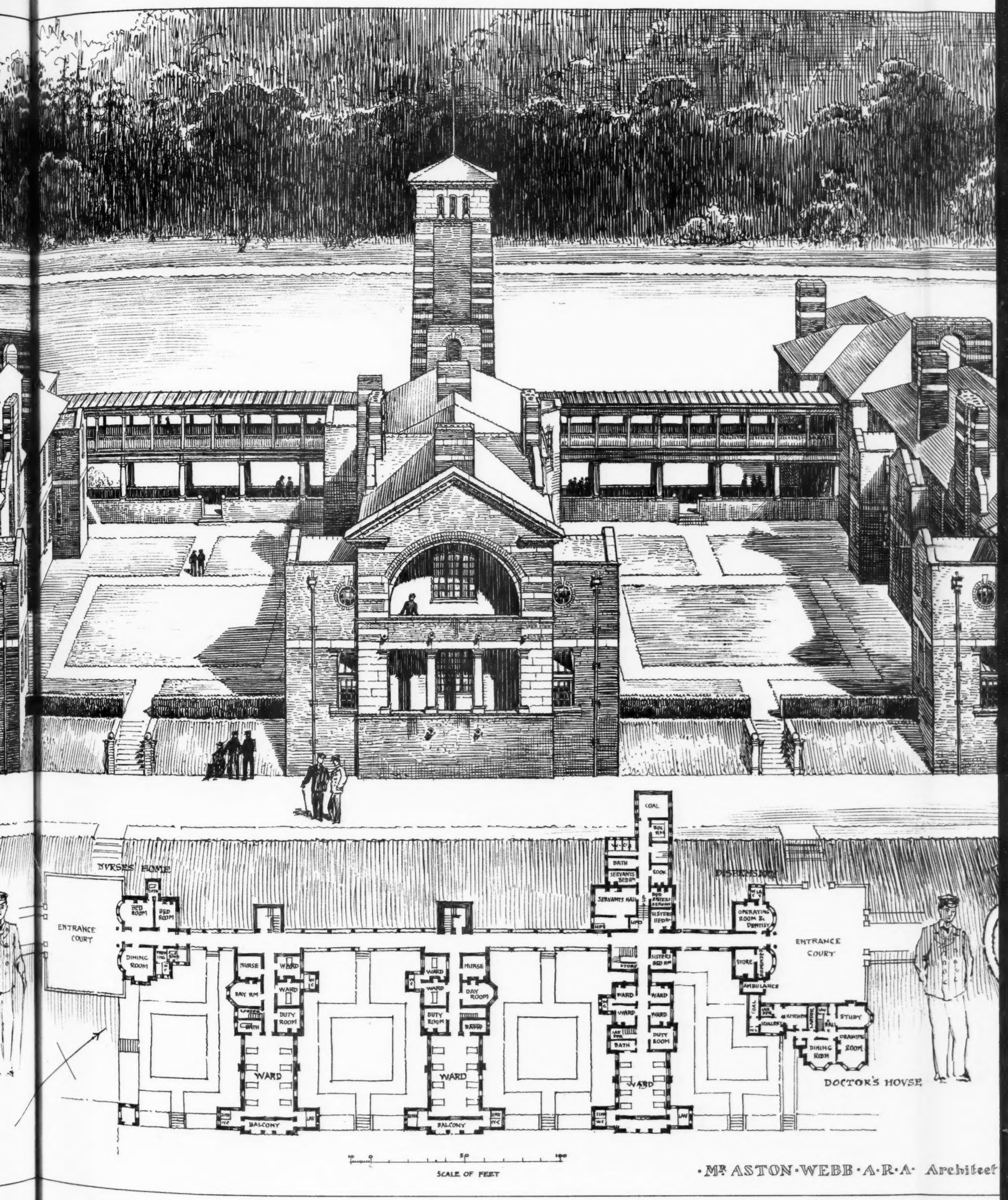
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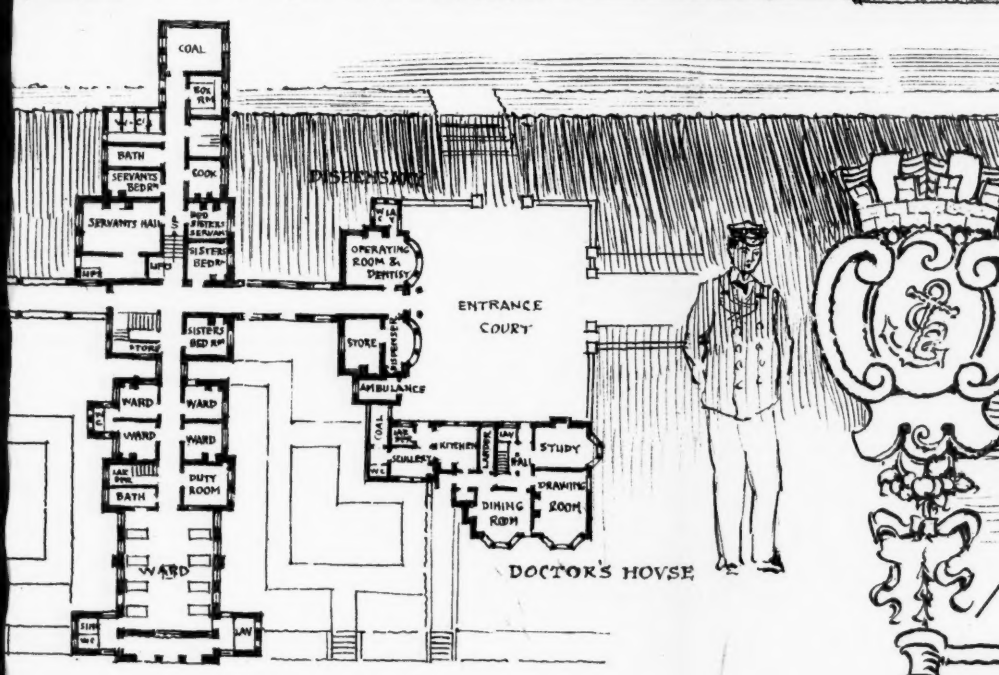

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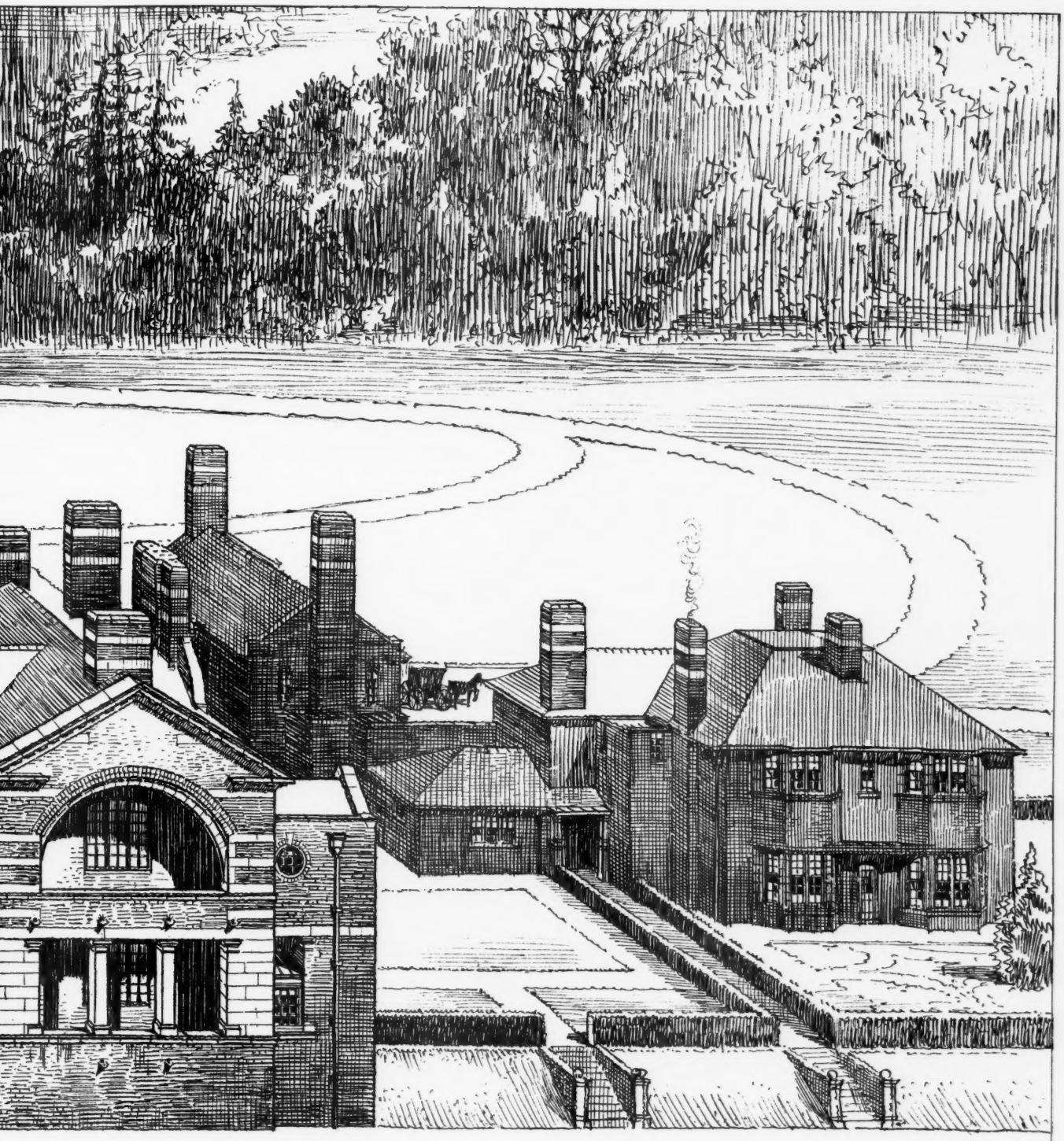

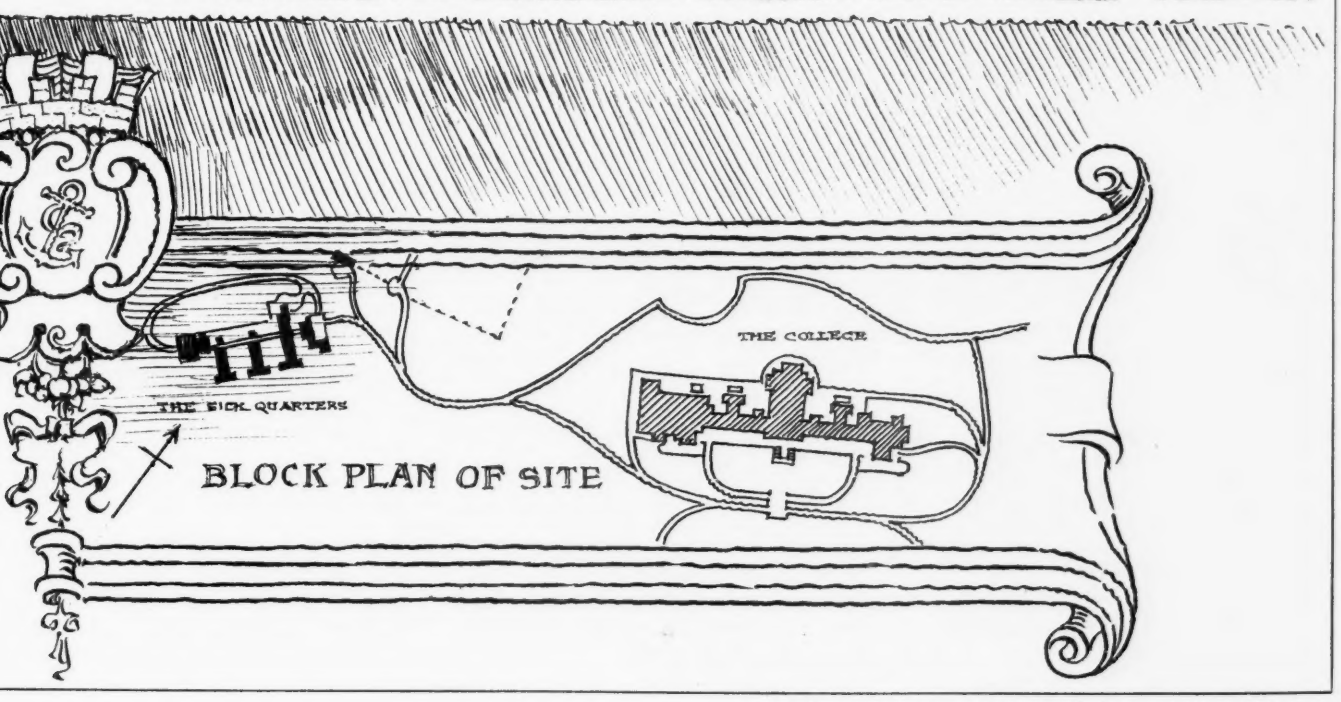

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